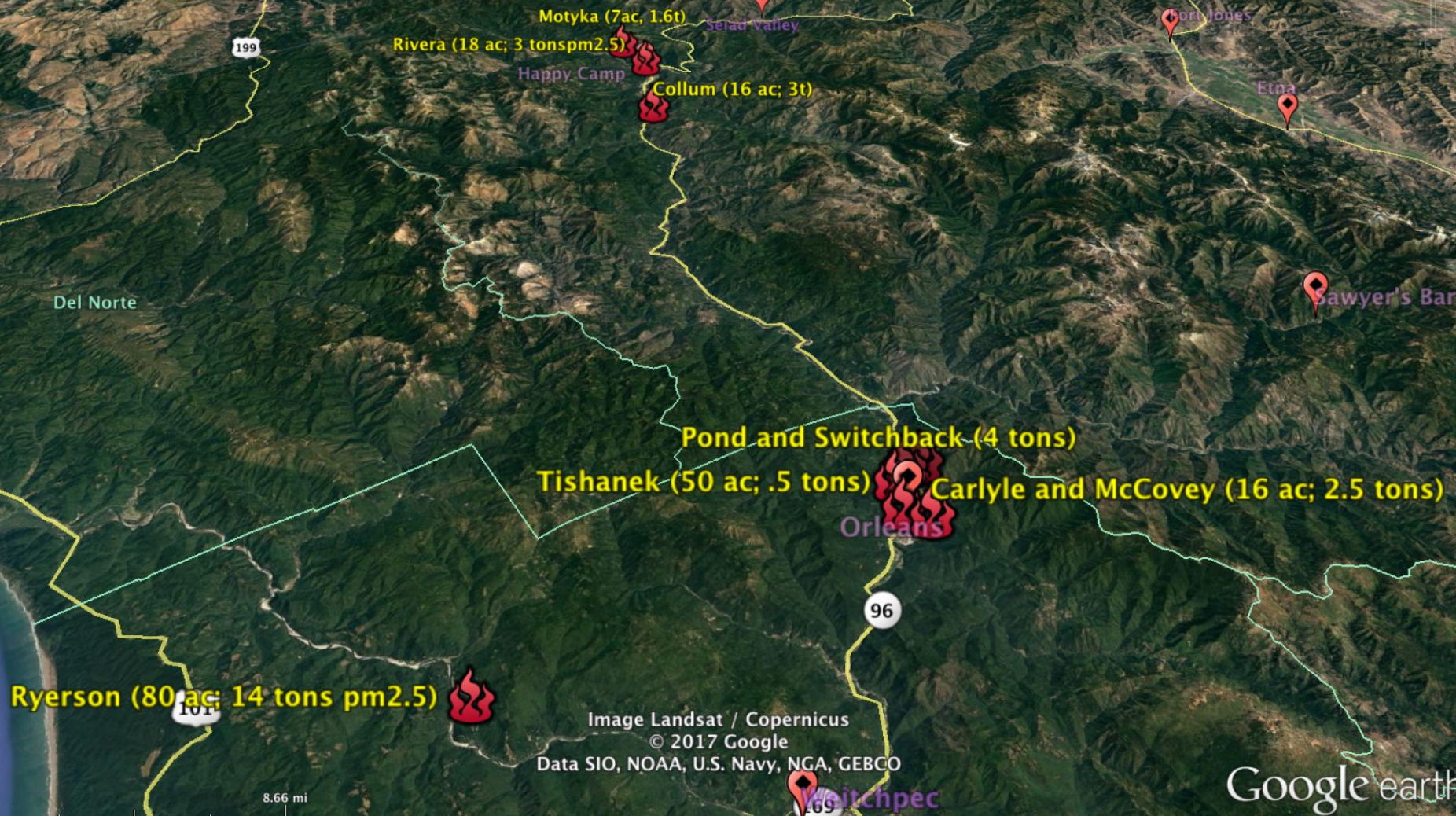


2017 Klamath River Trex Rx



QUALITATIVE SMP (WIND DIRECTION BASED)

WIND PRESCRIPTION

Surface Wind Speed (mph) & Direction (Direction of wind is the direction wind is coming from)

<20 Feet: Ideal: 0-6; west

Acceptable: 0-6; west, east, north

Unacceptable: >6; south

Wind Direction Aloft

>20 Feet: Ideal: west

Acceptable: west, east, north

Unacceptable: south

This is from Siskiyou/NE Plateau Air basin, not North Coast, but the approach is the same, when there's not modeling and monitoring available

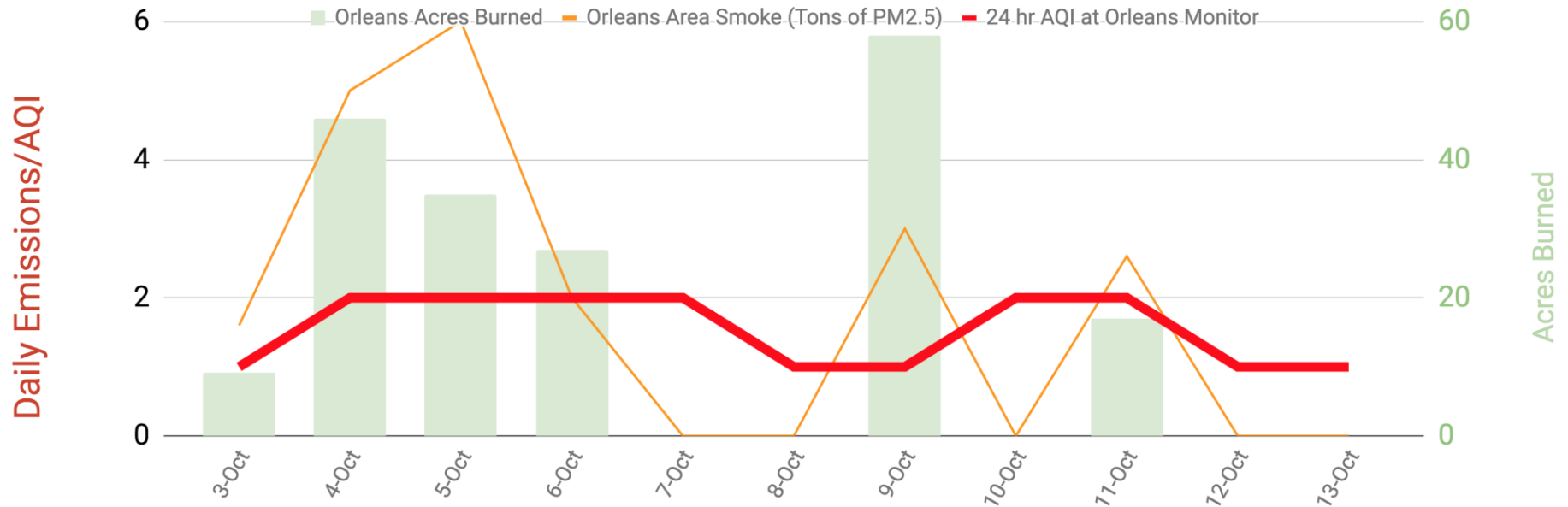
Identify potential meteorological conditions that would inhibit acceptable smoke dispersion:

No burn days. Strong inversions or when cumulative effects of burning are impacting air sheds. Conditions where impacts to Klamath Falls or Lava Beds National Monument are possible.



Quantitative SMP (emissions and dispersion based)

2017 Orleans TREX: Daily Acres, Emissions, and monitored AQI (1=good; 2=moderate; 3 = USG, Orleans)



Date	Time	Total Acres	Total Emissions	Orleans Acres Burned	Orleans Area Smoke (Tons of PM2.5)	Happy Camp Ac	HC Smoke (Tons of PM2.5)	24 hr AQI at Orleans Monitor	HC AQI	Units (ac)	Other fires influencing PM levels
3-Oct		25		9	1.6	16	3	1		1 Collum (16 ac, 3t); White Oak (9 ac, 1.6t)	
4-Oct		78	7	46	5	7	1.6	2		2 Motyka (7 ac, 1.6t); Ambush canyon (22 ac); Pond (24 ac)	
5-Oct		113	6	35	6	0	0	2		2 Bacon Flat (35 ac; 6t)	
6-Oct		140	2	27	2	0	0	2		2 East Sims (17 ac, 1t) and switchback	
7-Oct		158	3	0	0	18	3.24	2		2 Rivera (18 ac; 3t)	Miller WF ~200 ac*
8-Oct		158	0	0	0	0	0	1		1 Holding (0 ac)	Miller WF ~200 ac*
9-Oct		216	3	58	3	0	0	1		1 McCovey 9 ac; Carlyle 6 ac (2.5 ton); Tishanek 43 ac (0.5t)	Miller WF XXac ;
10-Oct		216	0	0	0	0	0	2		2 Ryerson/Risling (80 ac not in Orleans; 11 tons)	Santa Rosa/Bay Area WFs 100,000+ ac; Walker Creek Rx 80ac*
11-Oct		233	3	17	2.6	0	0	2		2 Pearson A (15ac; 2.5 tons)	Santa Rosa/Bay Area WFs 30,000+ ac; Walker Creek Rx 200ac*
12-Oct		233	0	0	0	0	0	1		2 Demob/Holding	Walker Creek Rx*
13-Oct		233	0	0	0	0	0	1		0 Demob/Holding	
Total			23	192	20	41	8	17	17		

*acreage estimates are based on second-hand information, see incident data for more accurate data

TOTAL TREX ACRES (80 ac. downriver, 41 ac Happy Camp, 192 in Orleans)

313

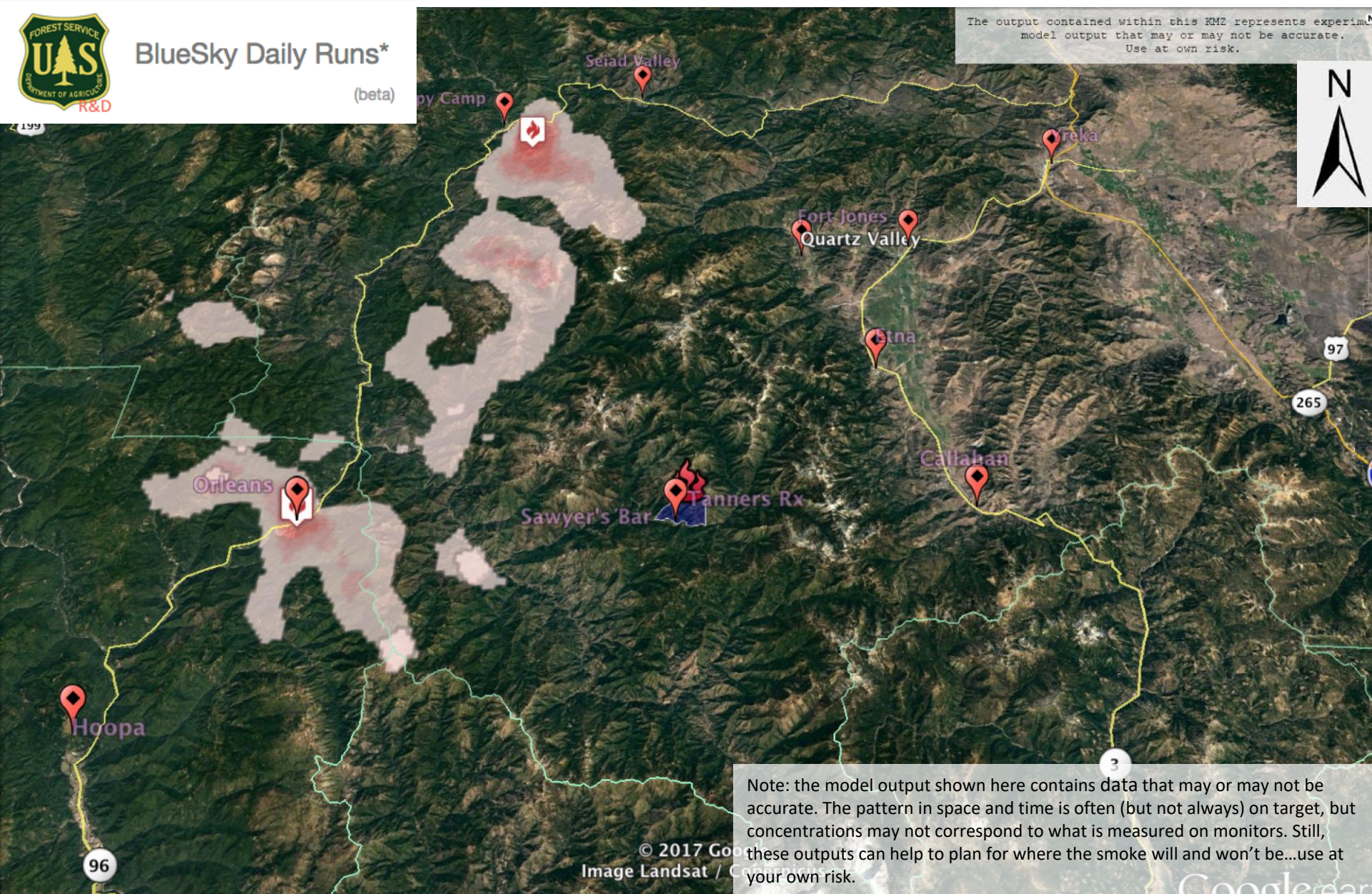
Modeled Smoke over NW CA, Relative 24-hr patterns (N Winds)



BlueSky Daily Runs*

(beta)

The output contained within this KMZ represents experimental model output that may or may not be accurate. Use at own risk.



Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

© 2017 Google
Image Landsat /

Google Earth

~13 miles

Lighter smoke

Heavier smoke

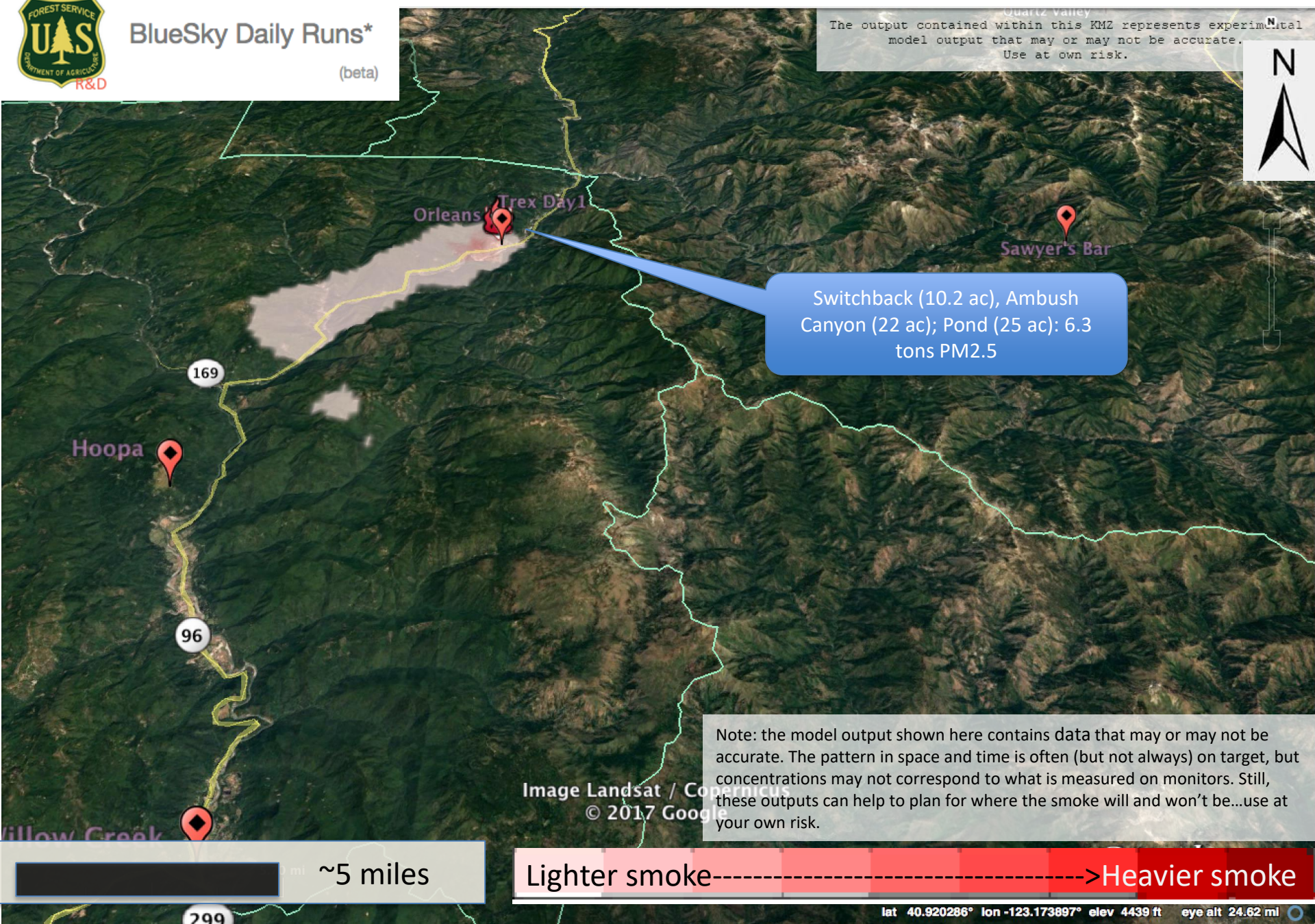
Modeled Smoke Tuesday 10/3 in and around Orleans (24 hr. ave)



BlueSky Daily Runs*

(beta)

Quartz Valley
The output contained within this KMZ represents experimental model output that may or may not be accurate. Use at own risk.



Switchback (10.2 ac), Ambush Canyon (22 ac); Pond (25 ac): 6.3 tons PM2.5

Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

Image Landsat / Copernicus
© 2017 Google

Lighter smoke----->Heavier smoke

Modeled Smoke Tuesday 10/3 in and around Happy Camp (24 hr. ave)



BlueSky Daily Runs*

(beta)

The output contained within this KMZ represents experimental model output that may or may not be accurate. Use at own risk.



Collum unit (16 ac; 2.8 tons pm2.5)

Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

~1.5 miles

Lighter smoke

Heavier smoke

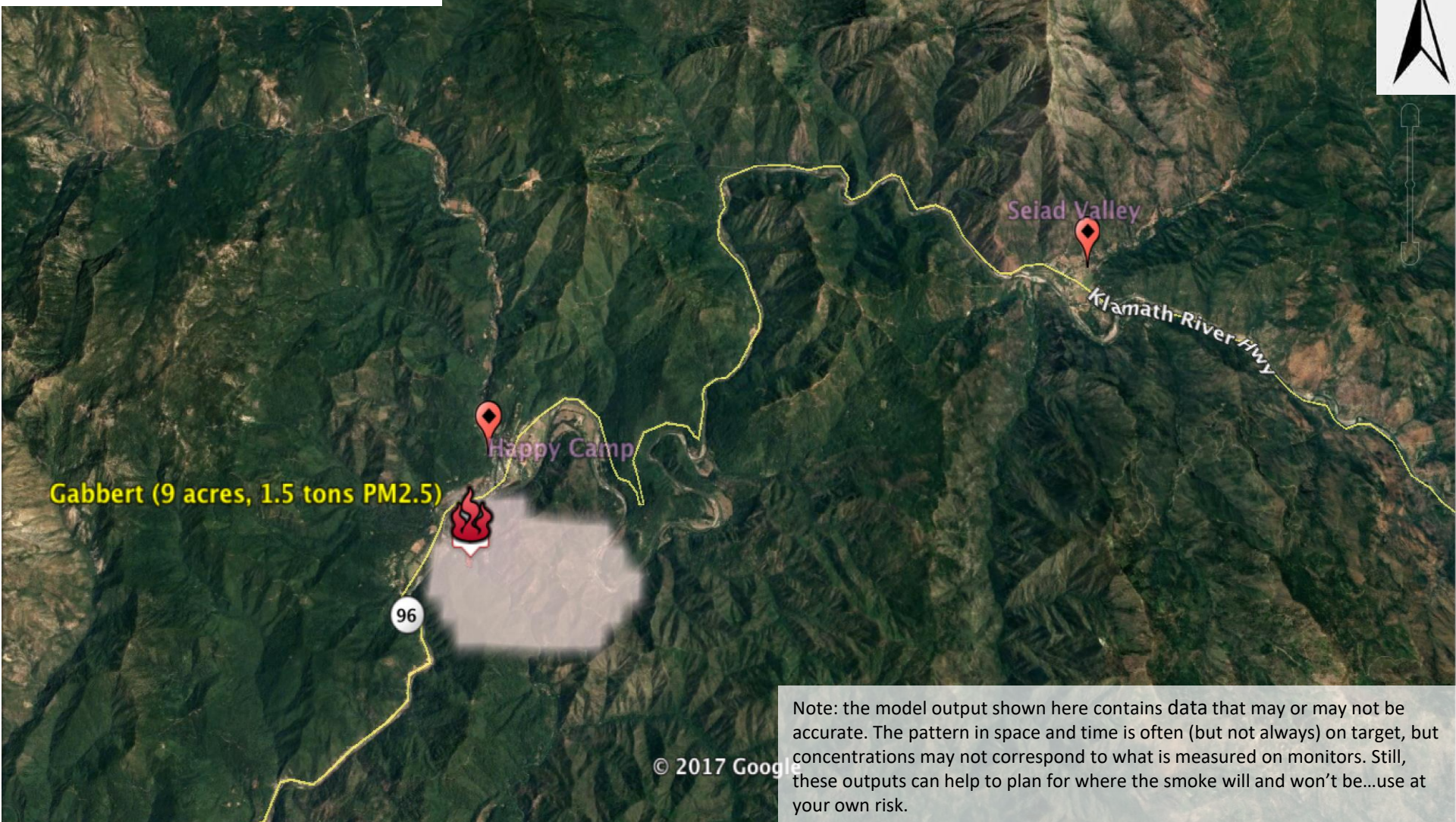
Modeled Smoke Wednesday 10/4 in and around Happy Camp (24 hr. ave)



BlueSky Daily Runs*

(beta)

The output contained within this KMZ represents experimental model output that may or may not be accurate. Use at own risk.



Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

© 2017 Google

mi ~4.2 miles

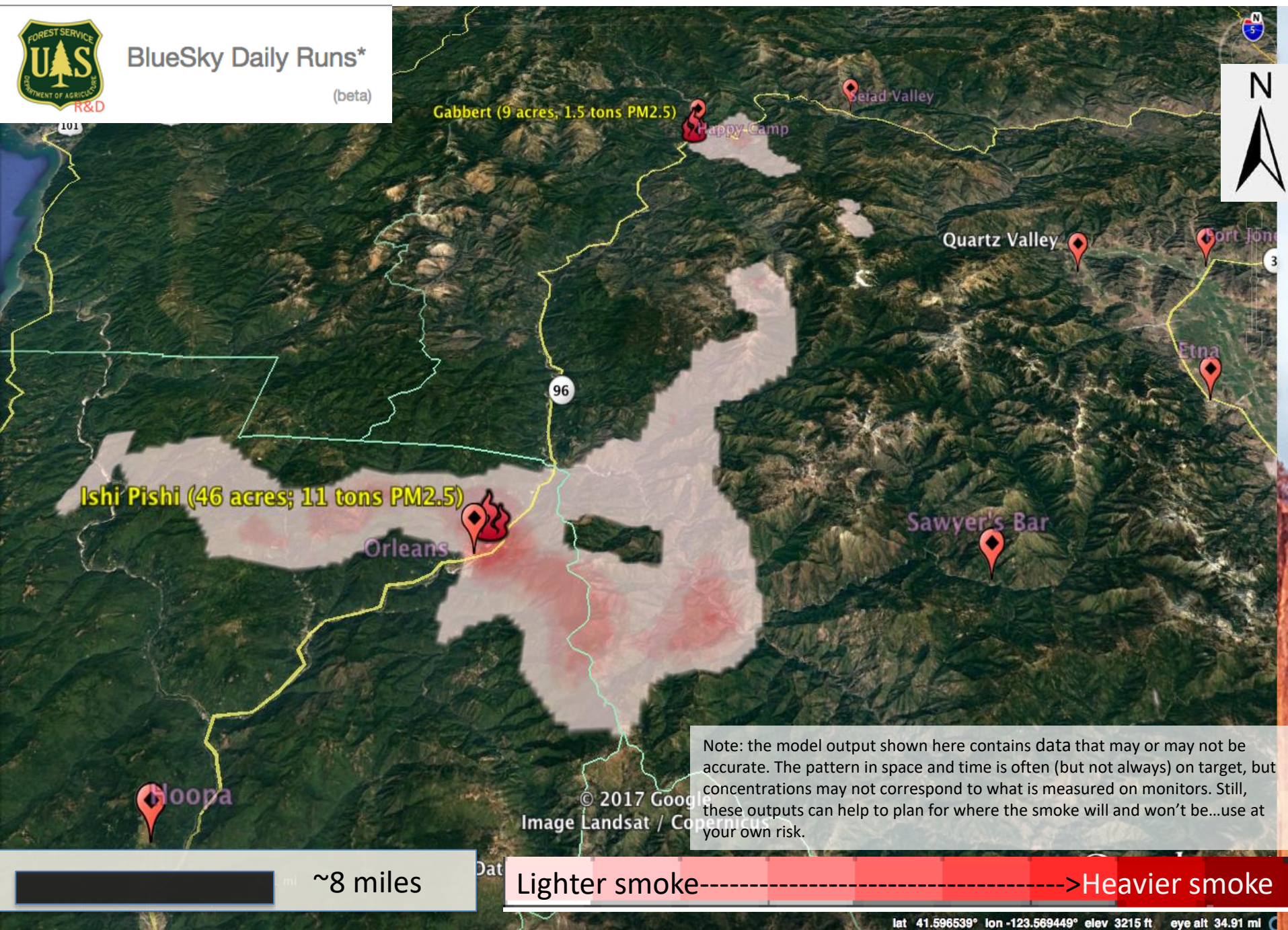
Lighter smoke----->Heavier smoke

Modeled Smoke Wednesday 10/4, Happy Camp and Orleans (24 hr. ave)



BlueSky Daily Runs*

(beta)

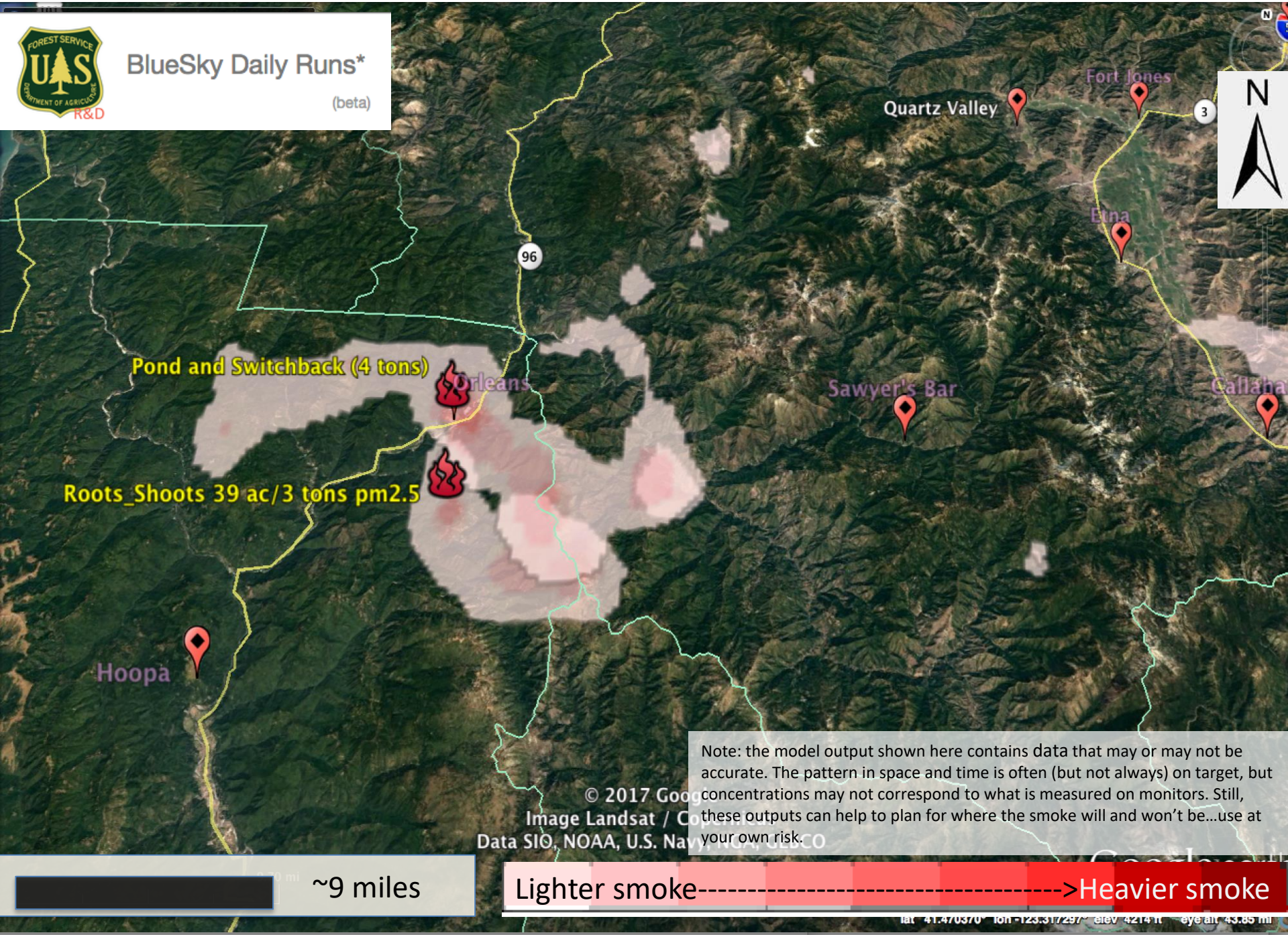


Modeled Smoke Wednesday 10/4, Orleans with Rootsshoots,Pond,Switchbck (24 hr. ave)



BlueSky Daily Runs*

(beta)



Modeled Smoke Wednesday 10/4, Orleans with Pond, Switchback evening ignition (24 hr. ave)



BlueSky Daily Runs*

(beta)

The output contained within this KMZ represents experimental model output that may or may not be accurate. Use at own risk.

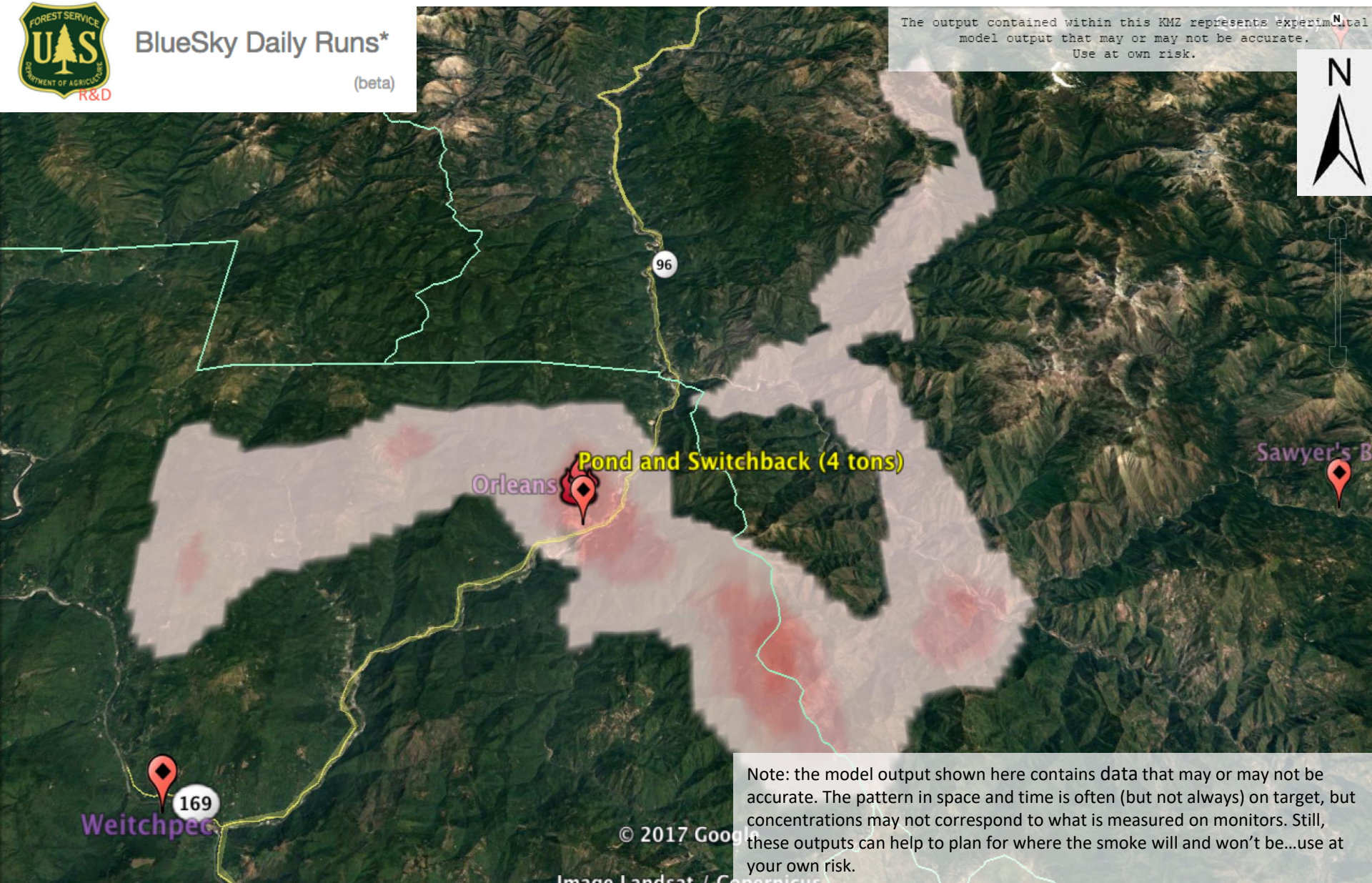


Image Landsat / Copernicus

Lighter smoke

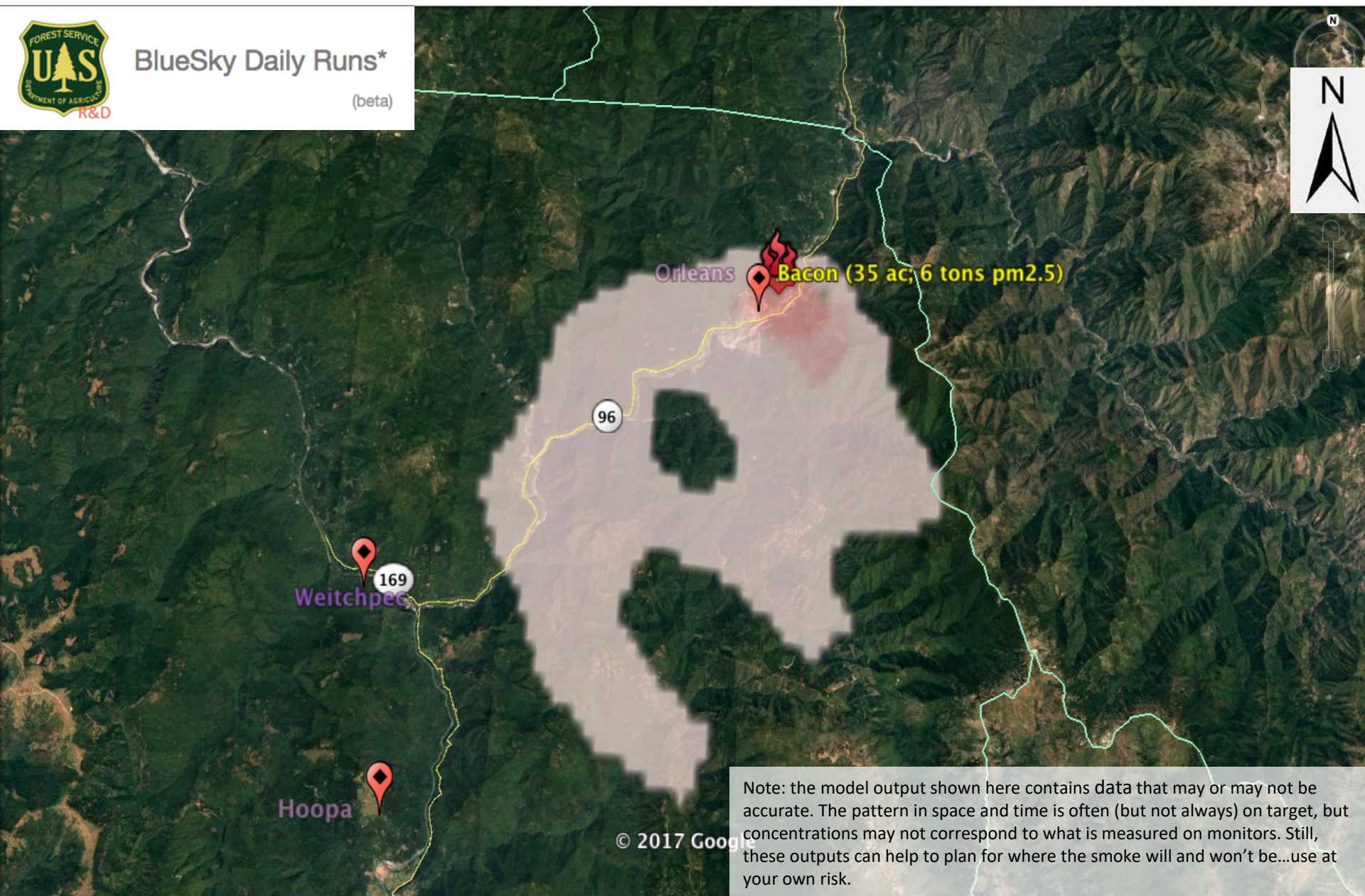
Heavier smoke

Modeled Smoke Thursday 10/5, Orleans Bacon, evening ignition (24 hr. ave)



BlueSky Daily Runs*

(beta)



Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

© 2017 Google

mi ~6 miles

Lighter smoke----->Heavier smoke

lat 41.393439° lon -123.365448° elev 2860 ft eye alt 30.23 mi

Modeled Smoke Thursday 10/5, Orleans Bacon, Daytime ignition (24 hr. ave)



BlueSky Daily Runs*

(beta)

Potential for a few hours of late night/early morning

Same impacts as this morning

Same impacts as this morning

Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

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Data LDEO-Columbia, NSF-NASA
Image Landsat / Copernicus

Lighter smoke

>Heavier smoke

6 mi. ~6 miles

lat 41.866234° lon -124.541288° elev -1346 ft eye alt 62.71 mi

Modeled Smoke **Wednesday 10/11, Pearson (24 hr ave PM2.5)**



Modeled Smoke Friday 10/6, Orleans Bacon, Daytime ignition (24 hr. ave)



BlueSky Daily Runs*

(beta)

The output contained within this KMZ represents experimental model output that may or may not be accurate. Use at own risk.



Less impact, despite marginal dispersion, mostly due to low emissions (3 tons pm2.5)

No units tomorrow for HC

McCovey
EAST SIMS
Orleans

Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

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Image Landsat / Copernicus

Lighter smoke

Heavier smoke

Imagery Date: 5/28/2016 lat 41.311426° lon -123.225594° elev 3564 ft eye alt 39.67 mi

~6 miles

Modeled Smoke **Saturday 10/7**, Miller Fire (11 PM)



playground

2.0 beta

10/7/2017 11:08 pm

Miller (250 Ac/40 tons PM2.5 Saturday; 150 ac/24 tons PM Sun)

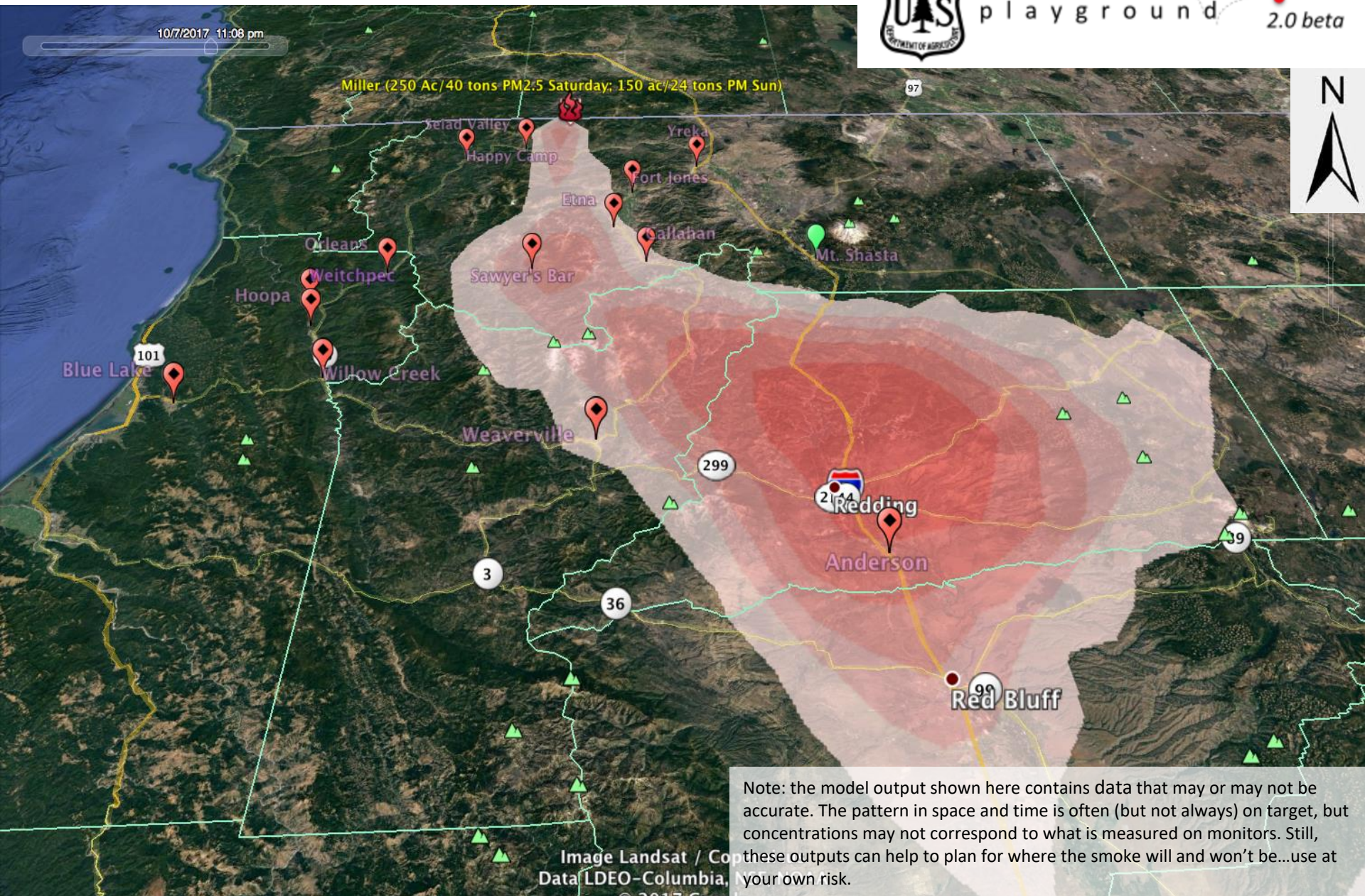


Image Landsat / Cop
Data LDEO-Columbia, your own risk.
© 2017 Google

~24 miles

Lighter smoke

>Heavier smoke

lat 41.110247° lon -123.508765° elev 5150 ft eye alt 99.04 mi

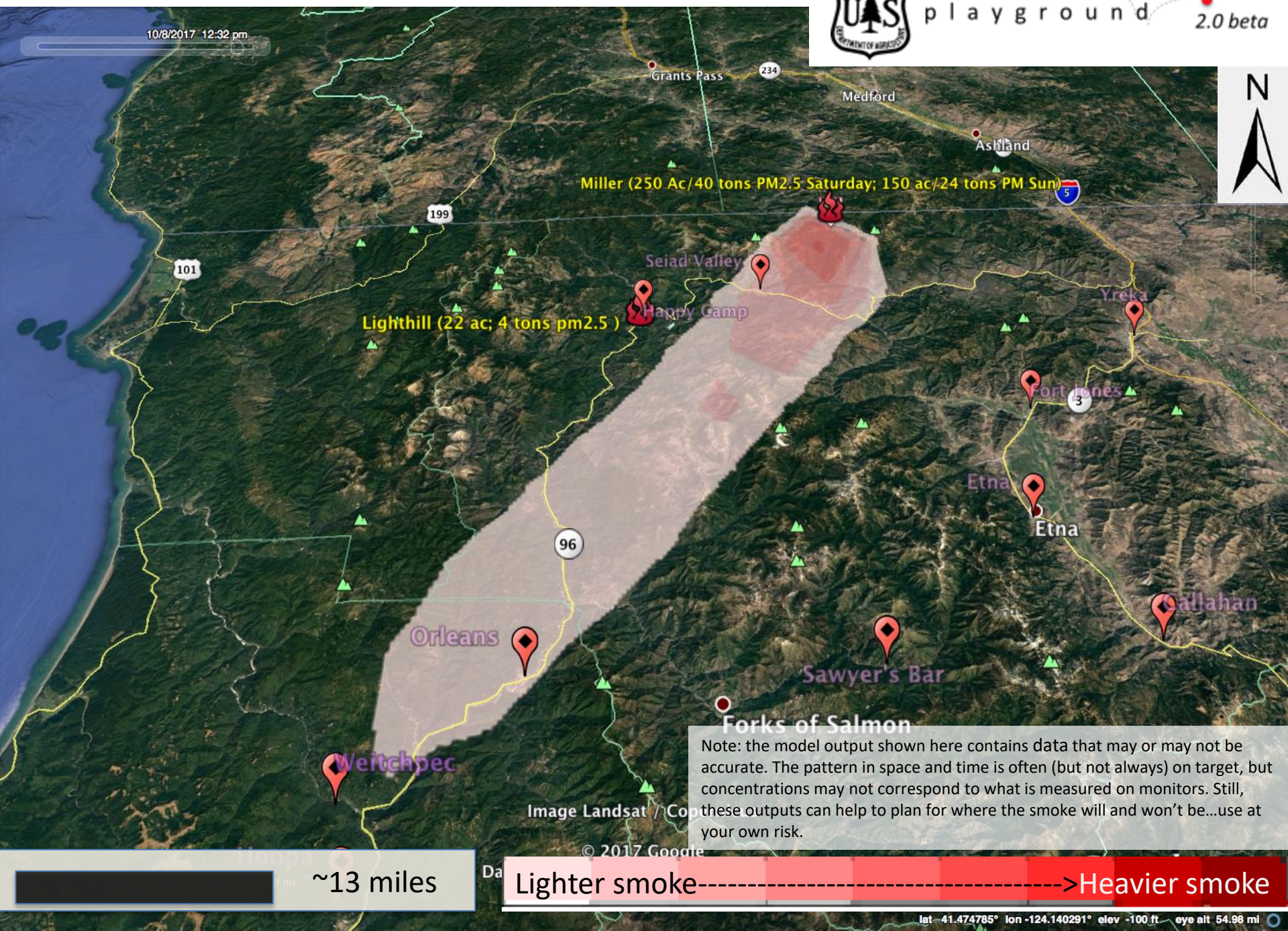
Modeled Smoke **Sunday 10/8**, Miller Fire (**12 PM**)



playground

2.0 beta

10/8/2017 12:32 pm



~13 miles

Lighter smoke

Heavier smoke

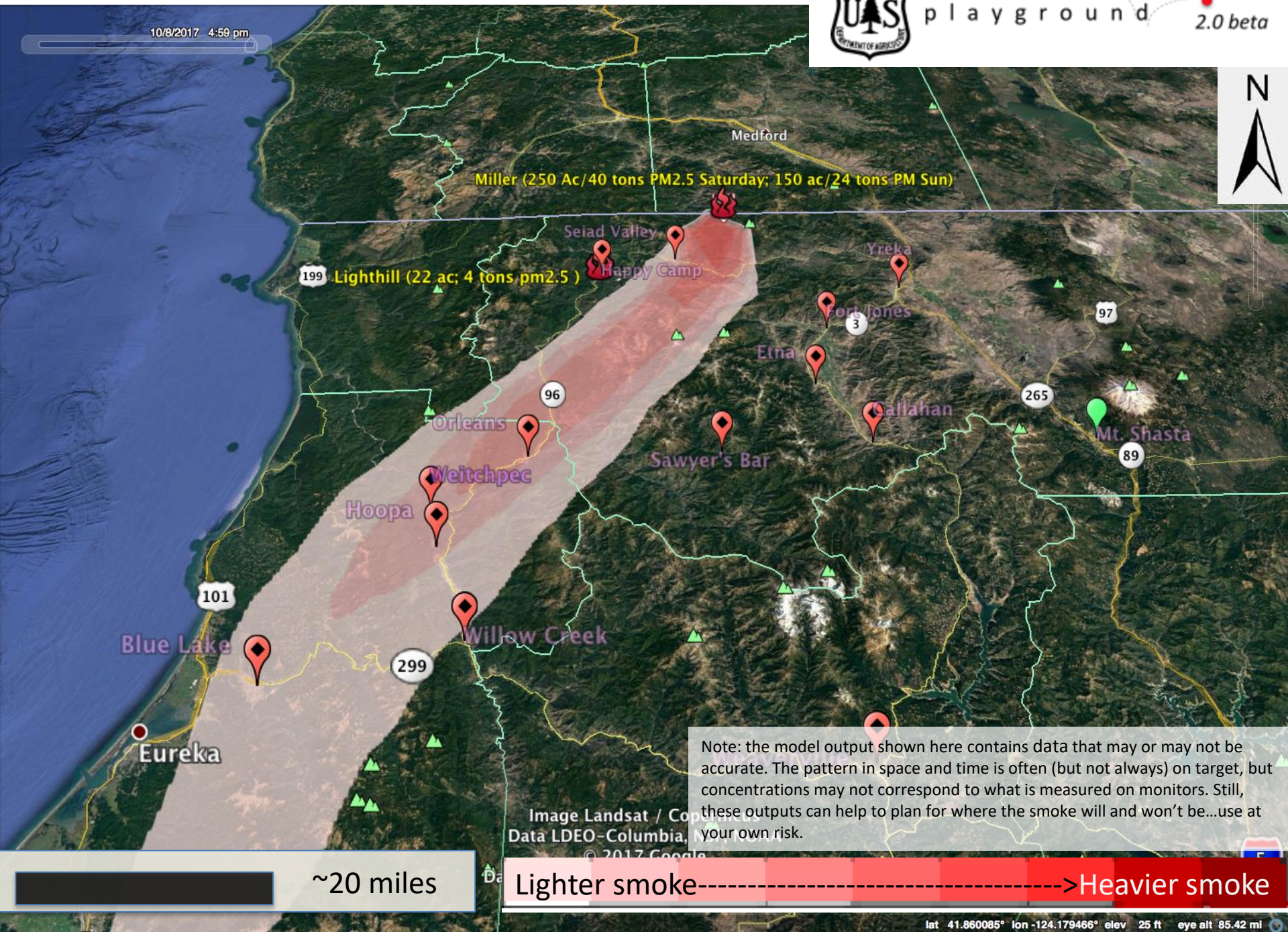
Modeled Smoke **Sunday 10/8**, Miller Fire (5 PM)



playground

2.0 beta

10/8/2017 4:59 pm



Miller (250 Ac/40 tons PM2.5 Saturday; 150 ac/24 tons PM Sun)

Lighthill (22 ac; 4 tons pm2.5)

Seiad Valley

Happy Camp

Yreka

Fort Jones

Etna

Callahan

Sawyer's Bar

Orleans

Weitchpec

Hoopa

Willow Creek

Blue Lake

Eureka

97

265

89

199

96

101

299

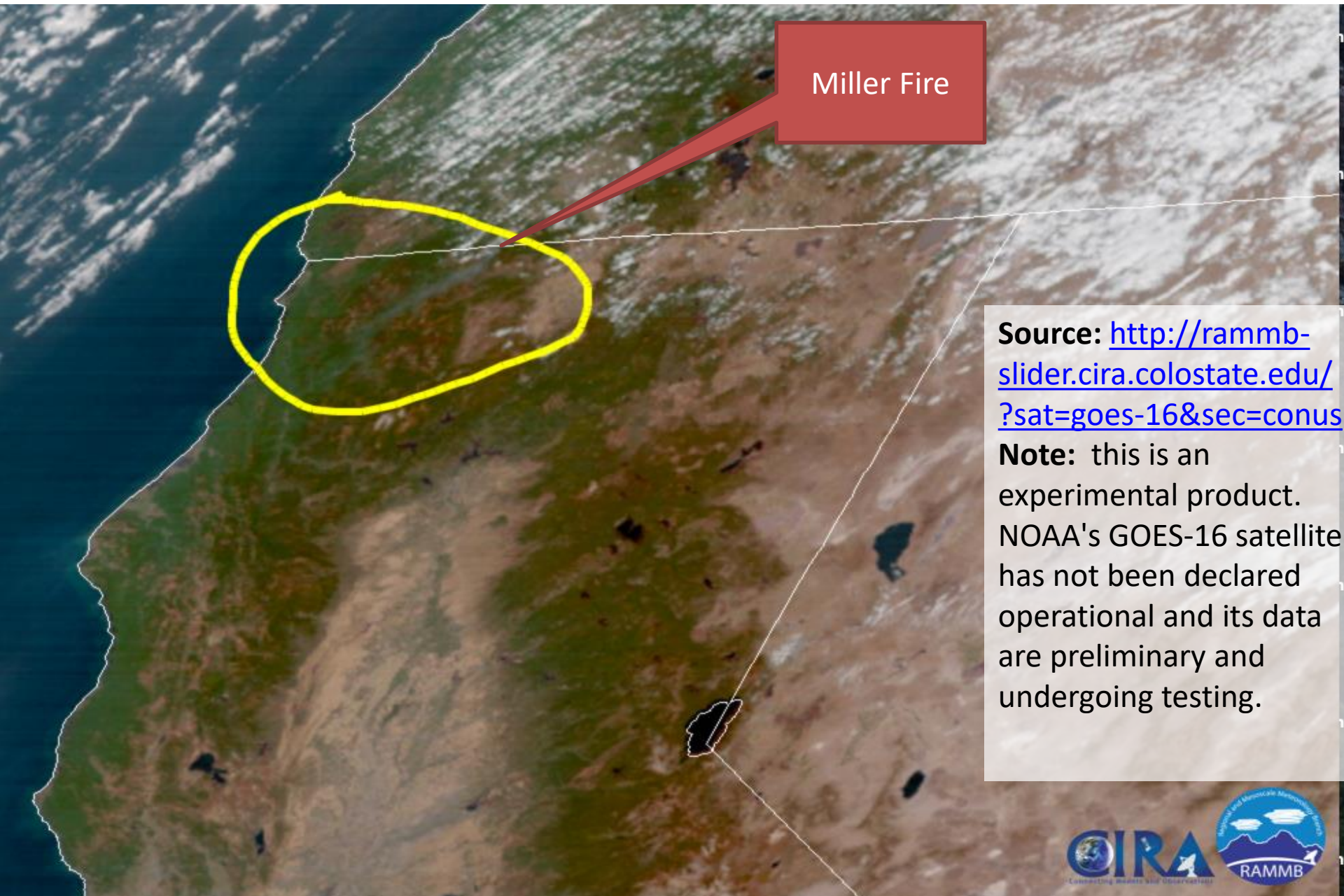
Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

Image Landsat / Copernicus
Data LDEO - Columbia, SC
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~20 miles

Lighter smoke -----> Heavier smoke

10/8/2017 GOES 16 Morning (11 AM) View



Miller Fire

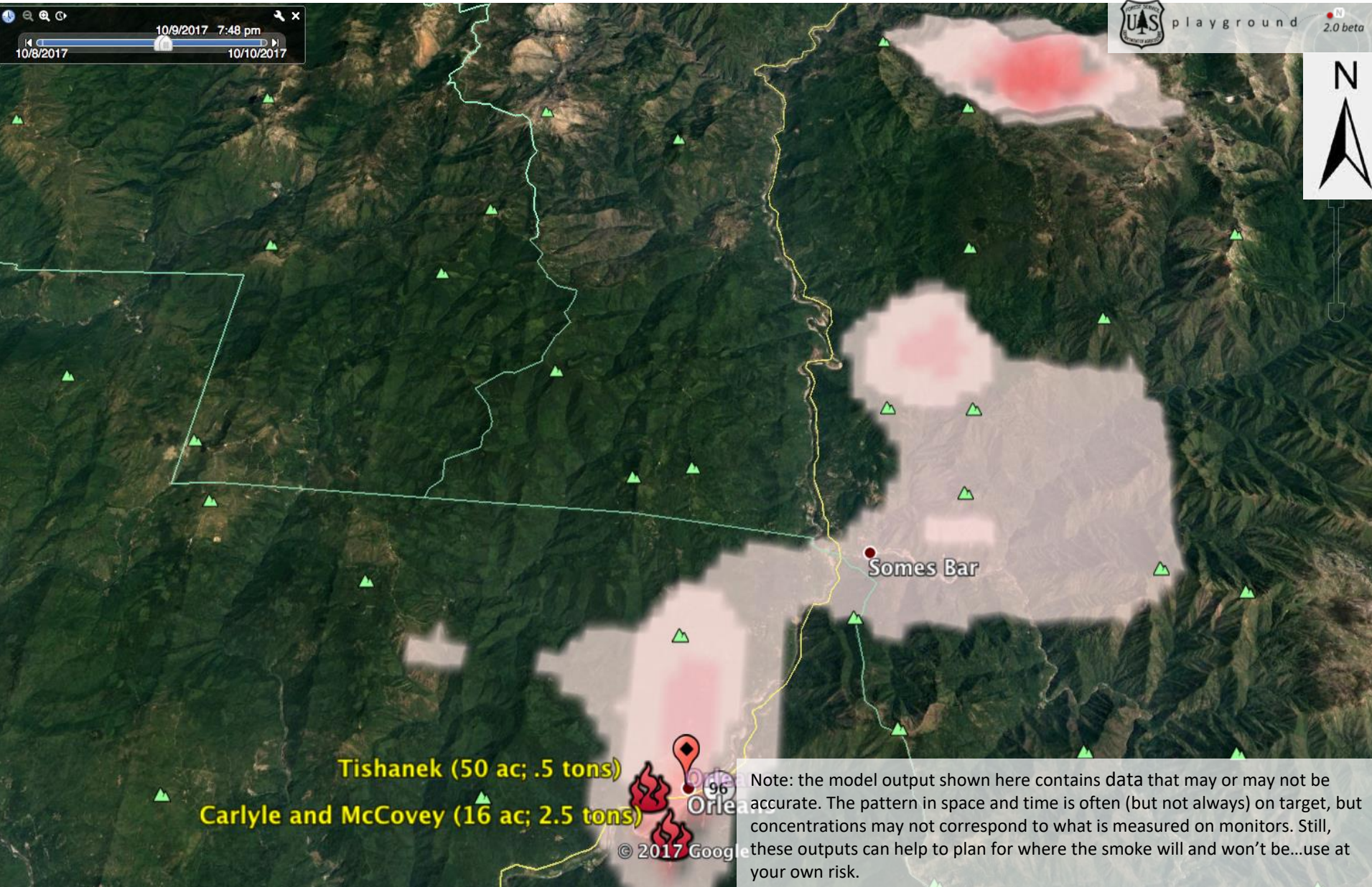
Source: <http://rammb-slider.cira.colostate.edu/?sat=goes-16&sec=conus>

Note: this is an experimental product. NOAA's GOES-16 satellite has not been declared operational and its data are preliminary and undergoing testing.

Modeled Smoke **Monday 10/9**, Carlyle, McCovey, Tishanek (**24 hr ave PM.25**)

10/9/2017 7:48 pm
10/8/2017 10/10/2017

UAS playground 2.0 beta



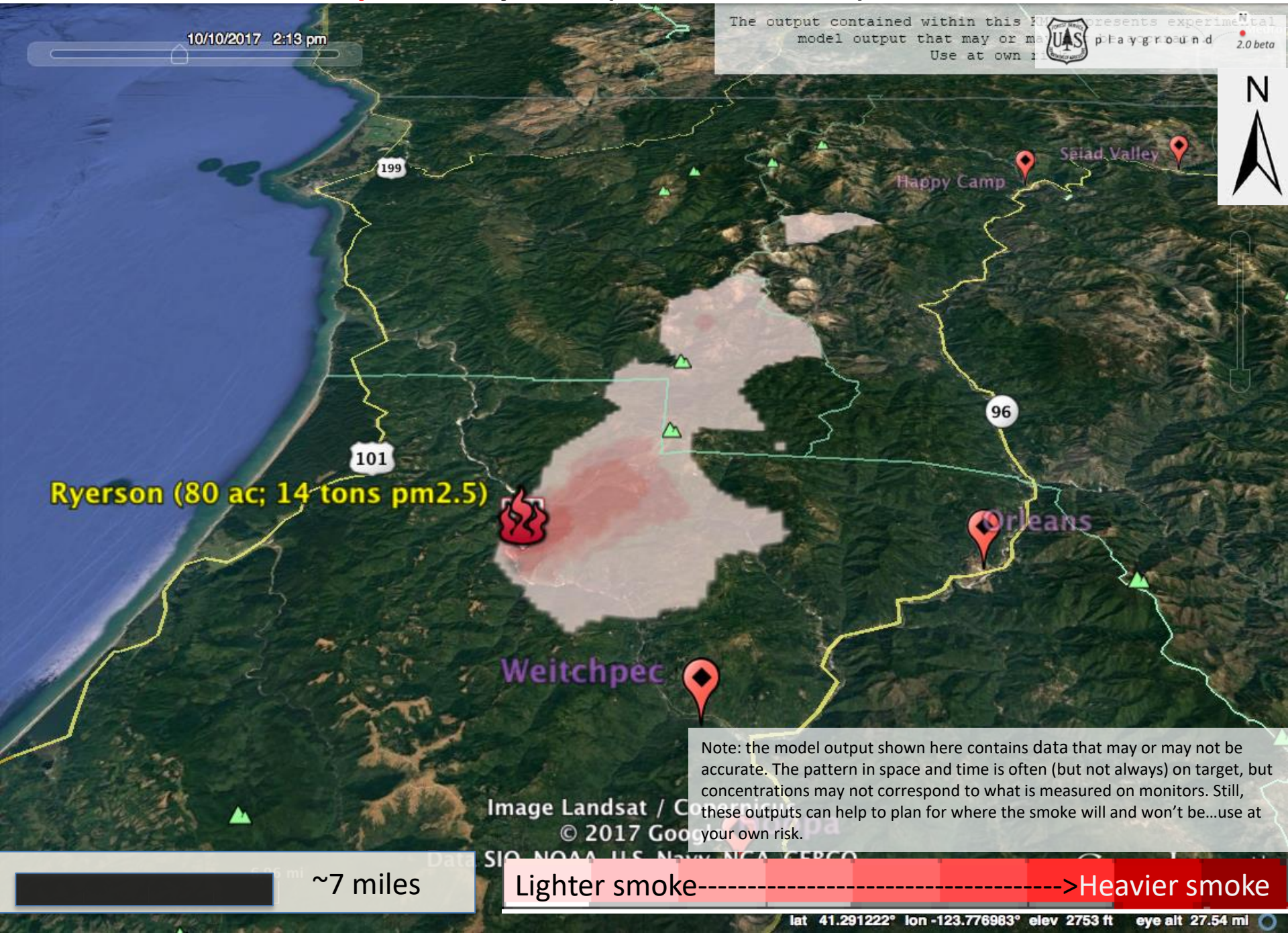
Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

~5 miles

Lighter smoke----->Heavier smoke

lat 41.435300° lon -123.564471° elev 3801 ft eye alt 23.48 mi

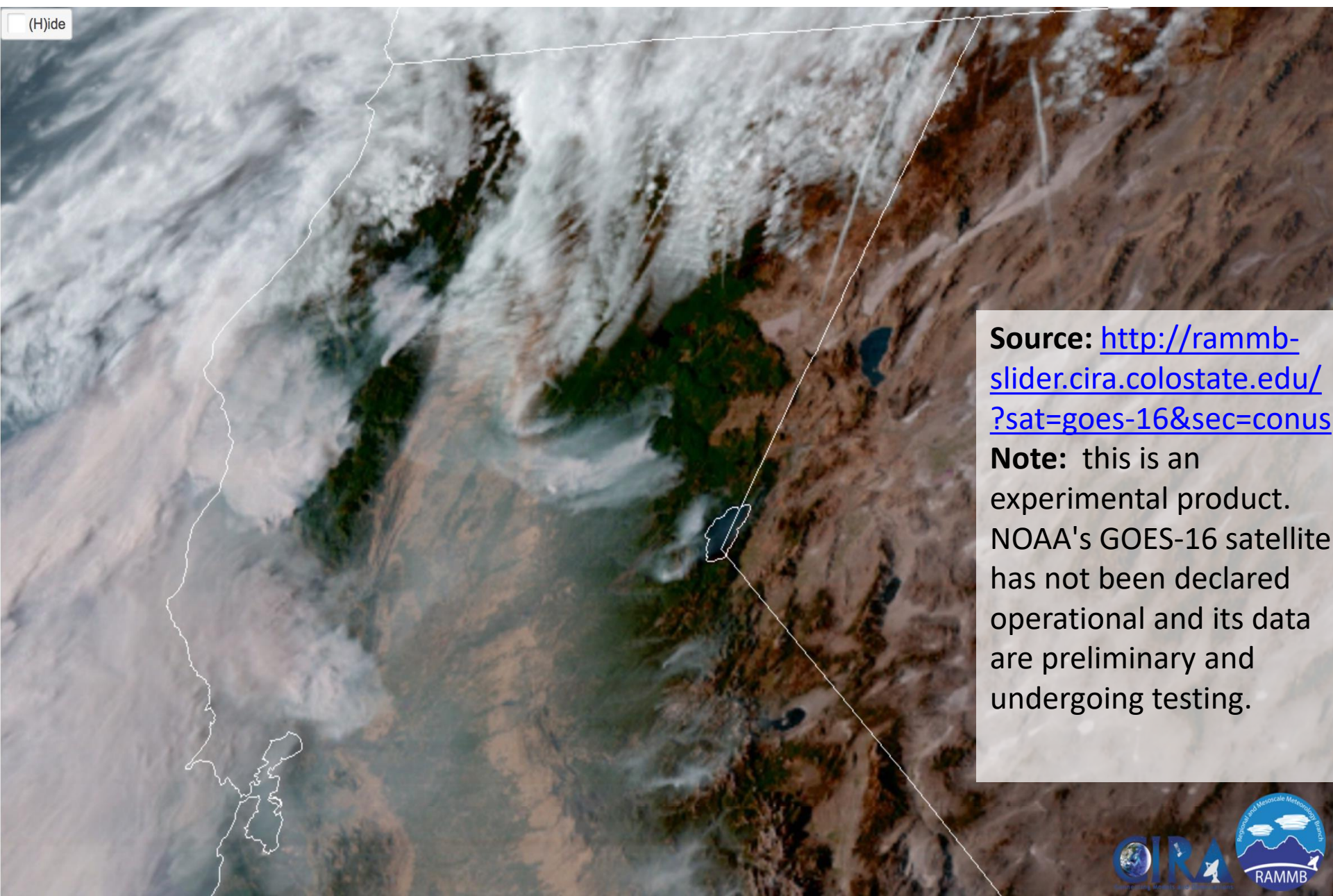
Modeled Smoke Tuesday 10/10, Ryerson (24 hr ave PM.25)



10/9/2017 Afternoon Satellite View



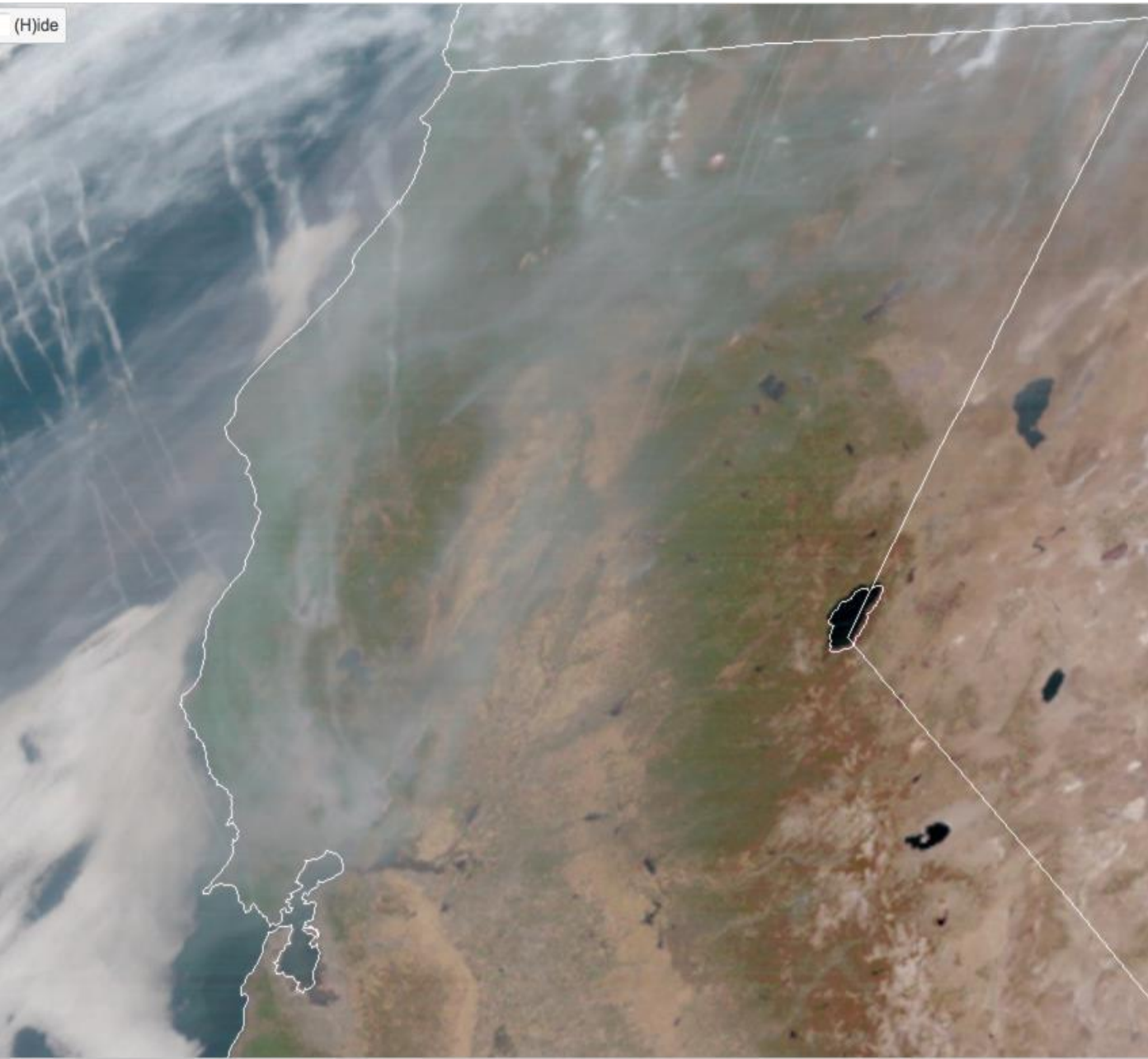
10/9/2017 GOES 16 Evening (5:40 PM) View



Source: <http://rammb-slider.cira.colostate.edu/?sat=goes-16&sec=conus>

Note: this is an experimental product. NOAA's GOES-16 satellite has not been declared operational and its data are preliminary and undergoing testing.

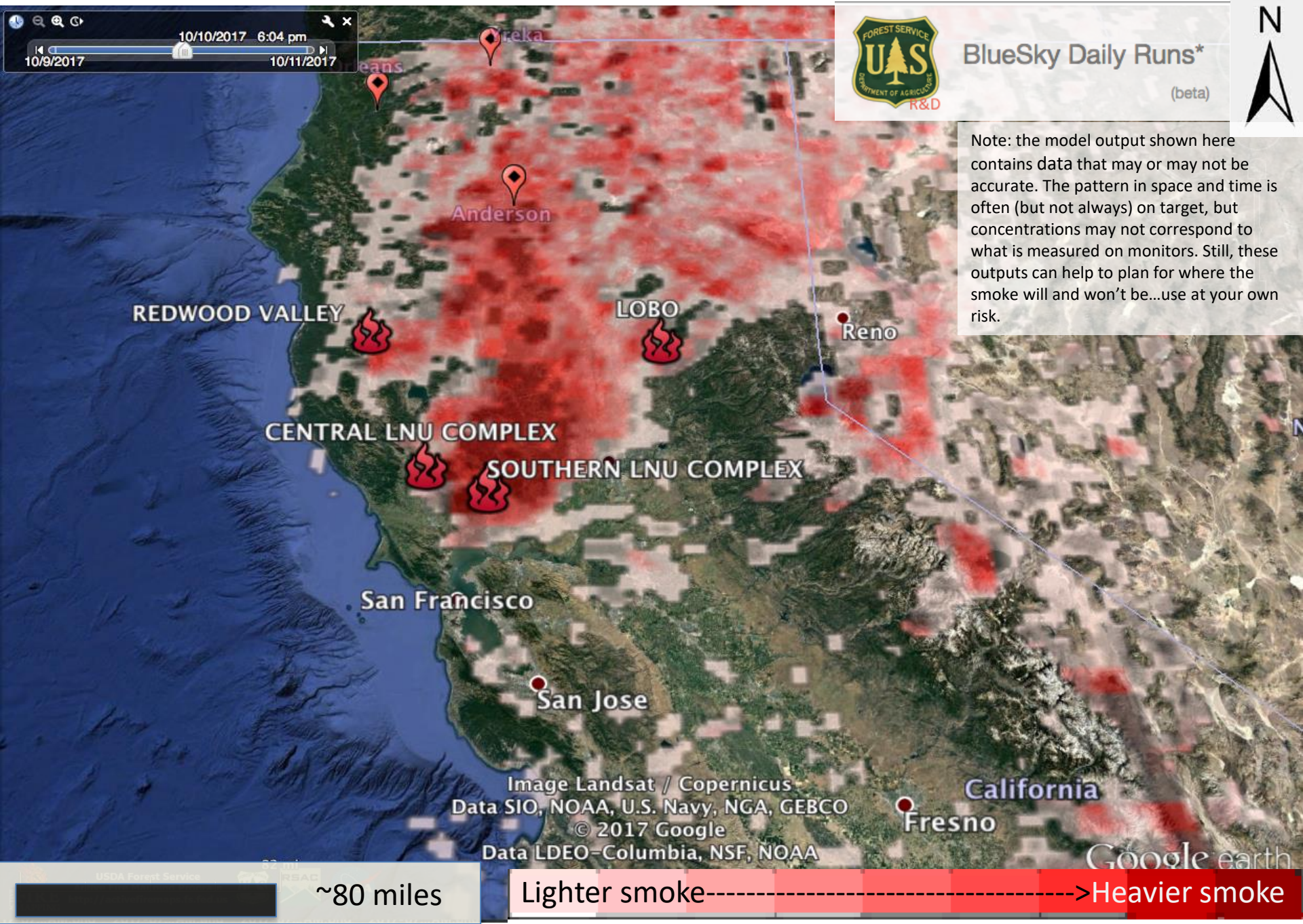
10/10/2017 GOES 16 Morning (10:22 AM) View



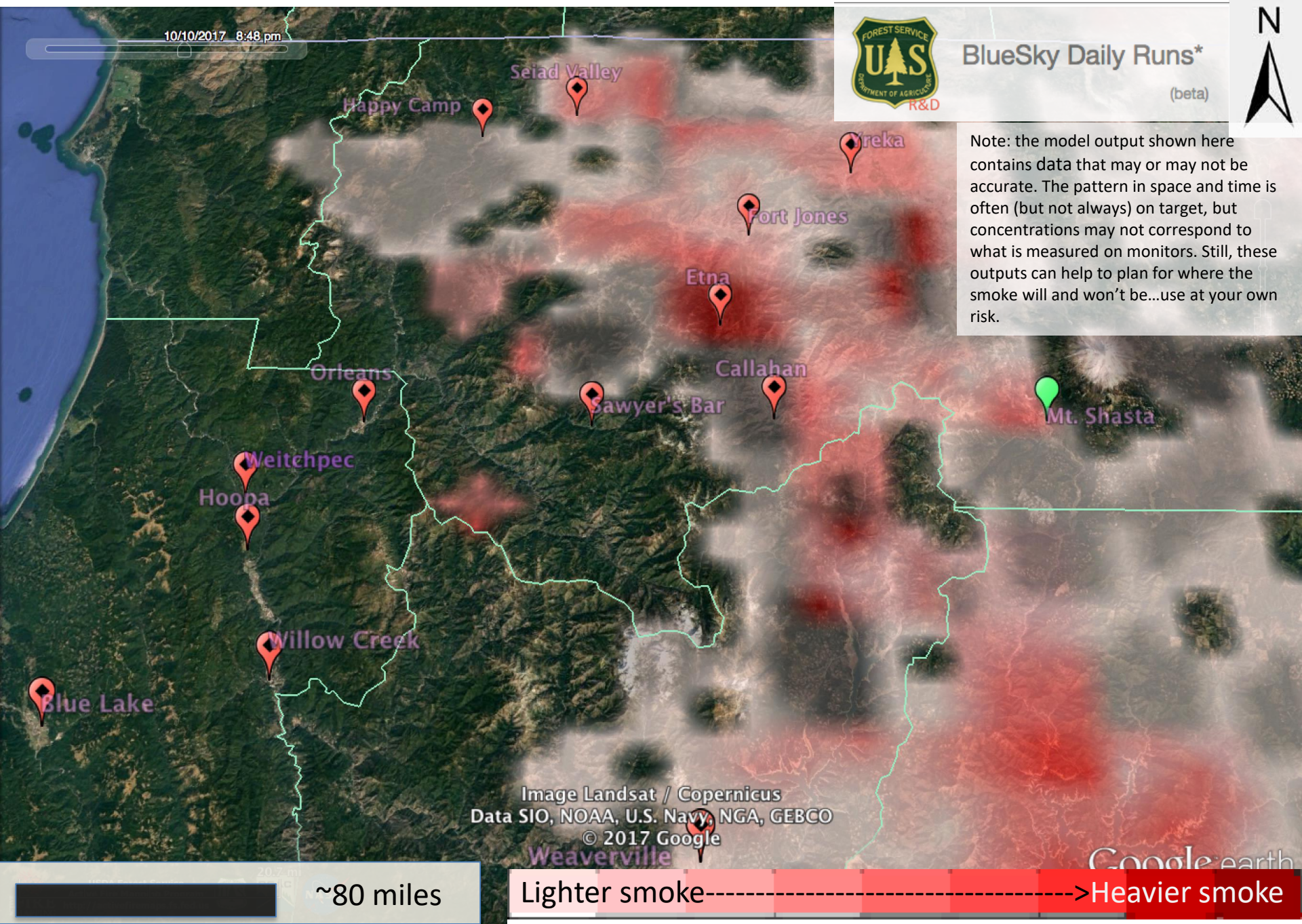
Source: <http://rammb-slider.cira.colostate.edu/?sat=goes-16&sec=conus>

Note: this is an experimental product. NOAA's GOES-16 satellite has not been declared operational and its data are preliminary and undergoing testing.

Smoke from Northern CA Fires in Siskiyou Humboldt Co: 10/10, 6 PM



Smoke from Northern CA Fires in Siskiyou Humboldt Co: 10/10, 6 PM

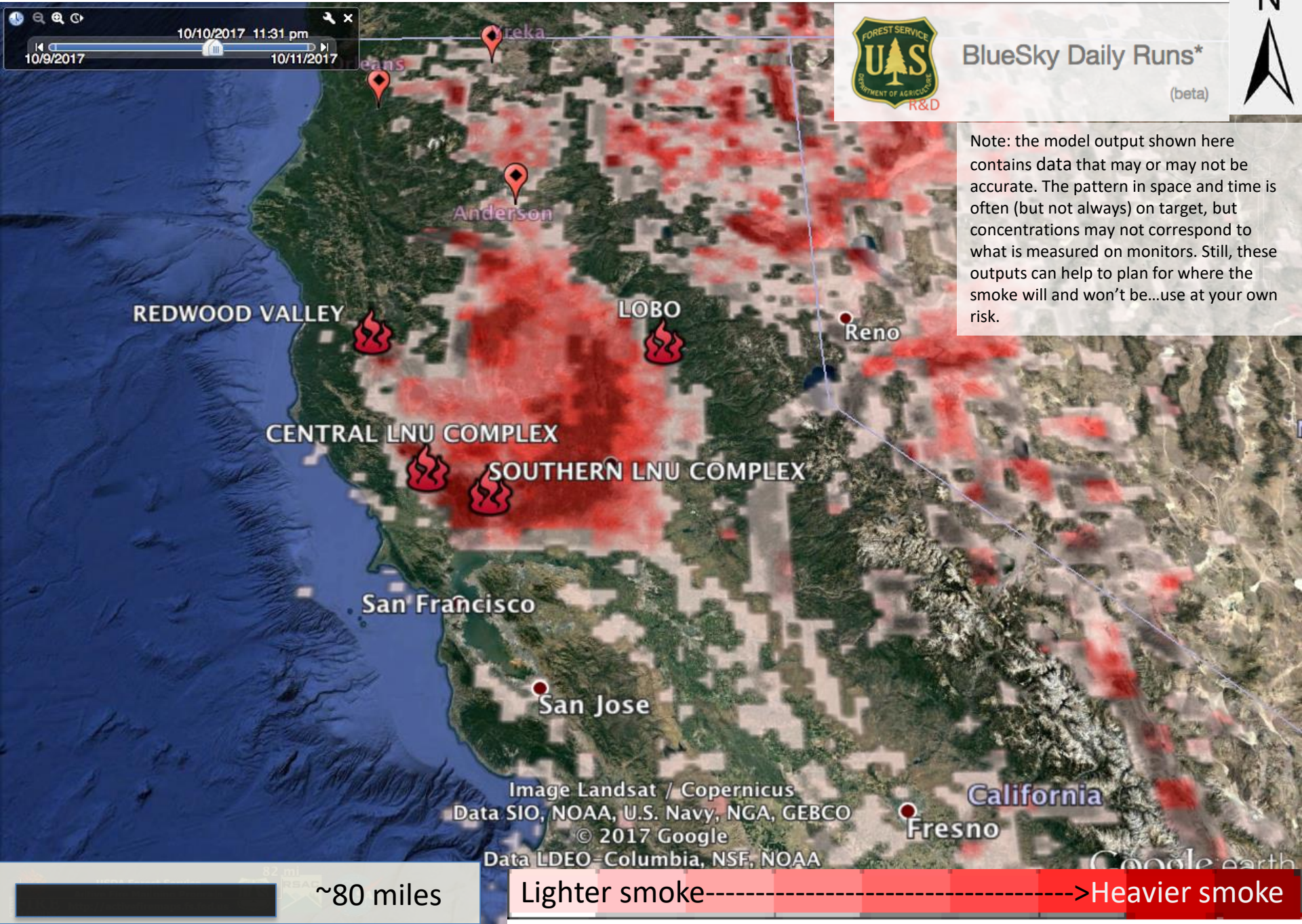


BlueSky Daily Runs*

(beta)

Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

Modeled Extent of Smoke from Northern CA Fires: 10/10, 11:30 PM



Modeled Extent of Smoke from Northern CA Fires: 10/11, 7:05 AM

10/11/2017 5:44 am
10/9/2017 10/11/2017

Current Large Incidents

- Incident Management Team - Type 1
- Incident Management Team - Type 2
- Incident Management Team - Other



BlueSky Daily Runs*

(beta)



Note: the model output shown here contains data that may or may not be accurate. The pattern in space and time is often (but not always) on target, but concentrations may not correspond to what is measured on monitors. Still, these outputs can help to plan for where the smoke will and won't be...use at your own risk.

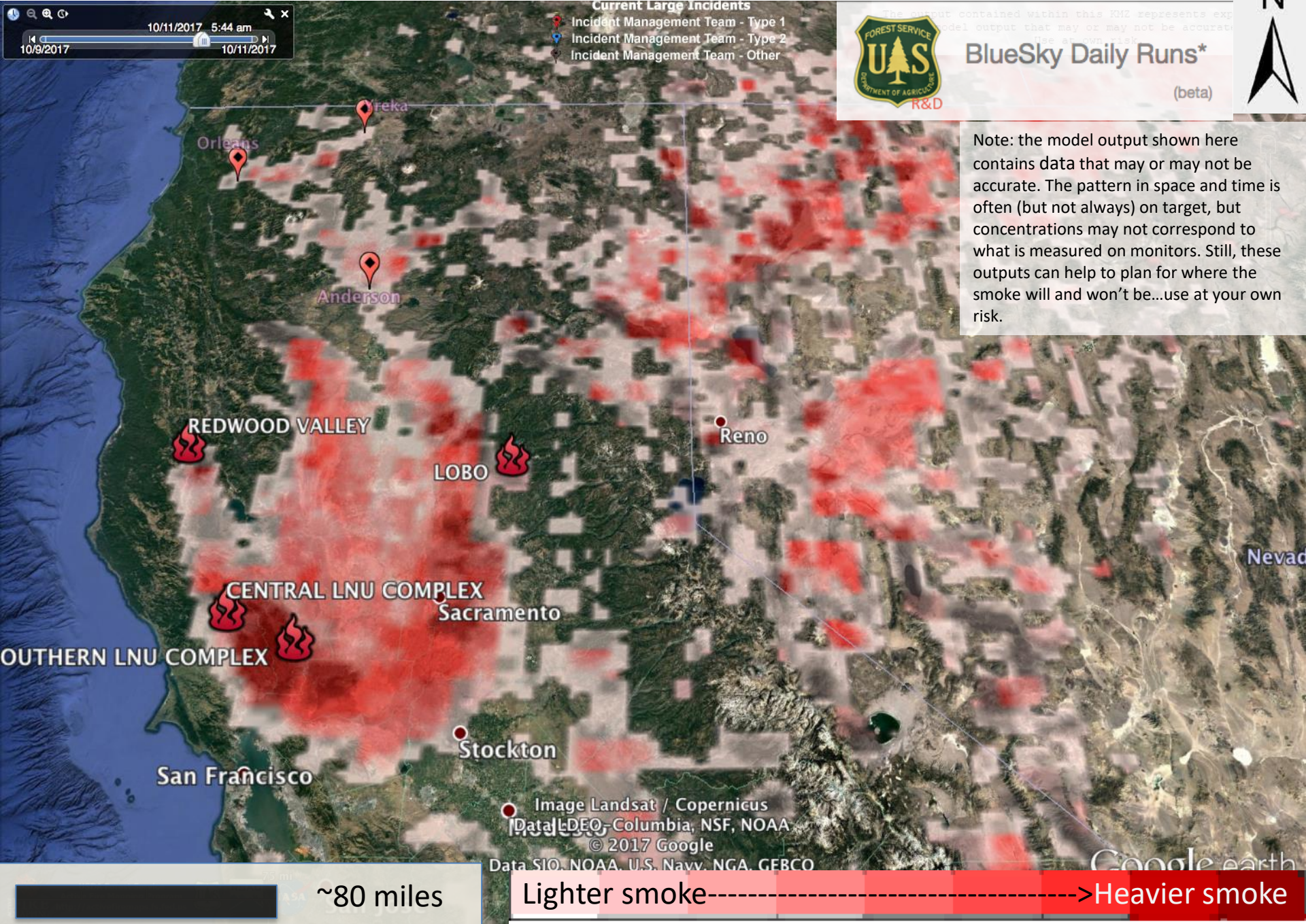


Image Landsat / Copernicus
Data LDEO, Columbia, NSF, NOAA
© 2017 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

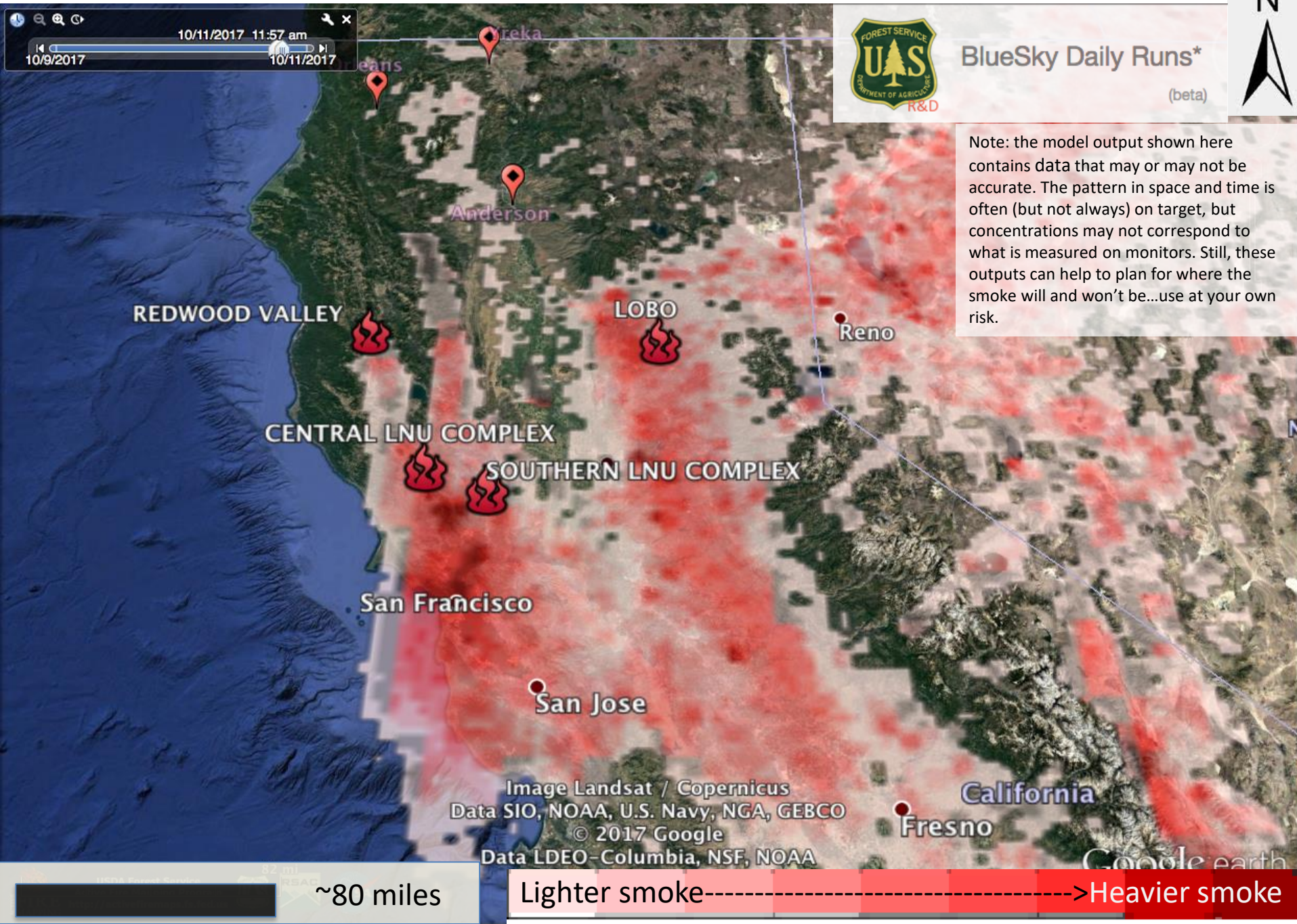
Google earth

~80 miles

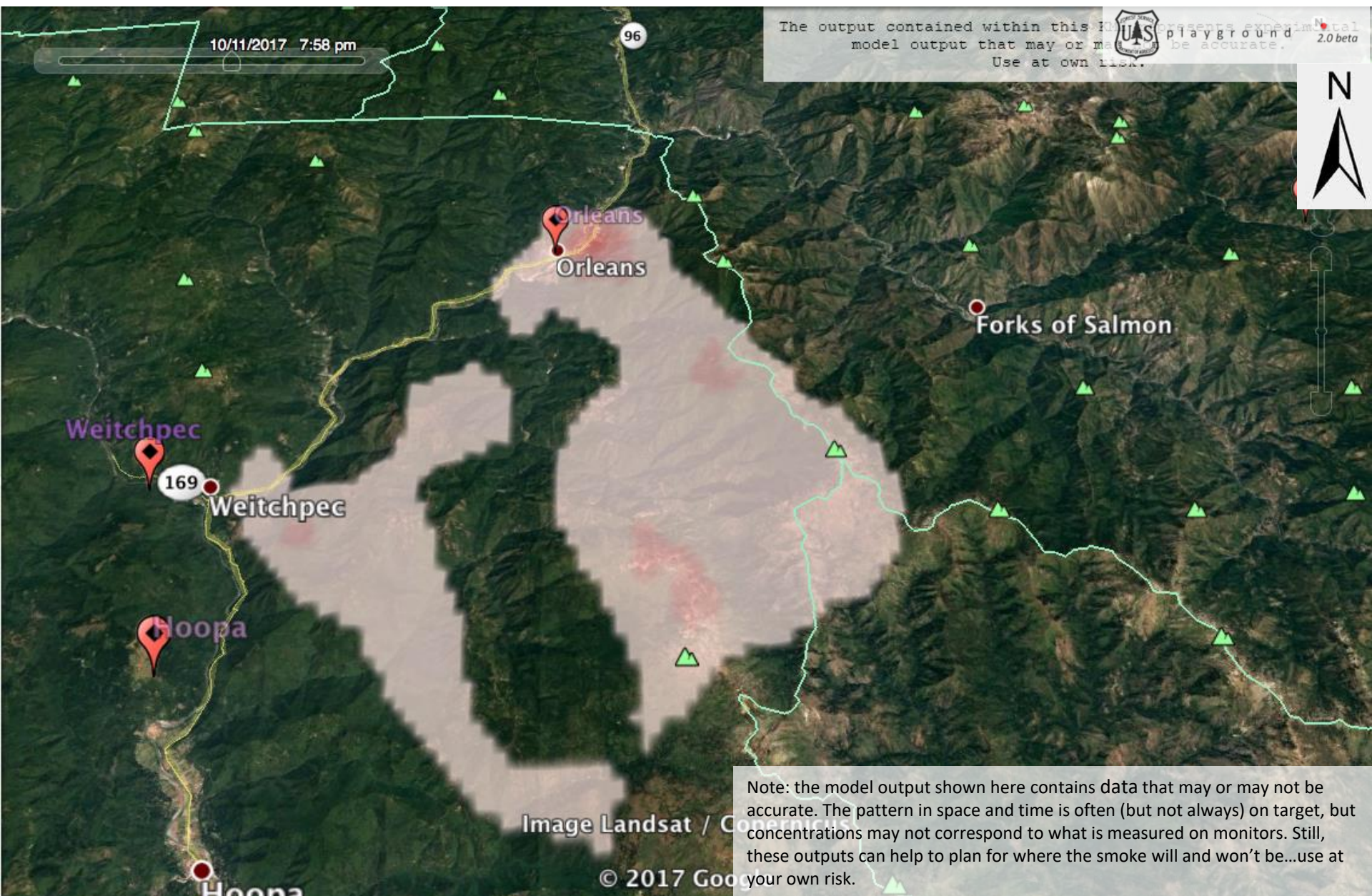
Lighter smoke

Heavier smoke

Modeled Extent of Smoke from Northern CA Fires: 10/11, 12 PM



Modeled Smoke **Wednesday 10/11**, Pearson, Purcell, Szabo (24 hr ave PM.25)

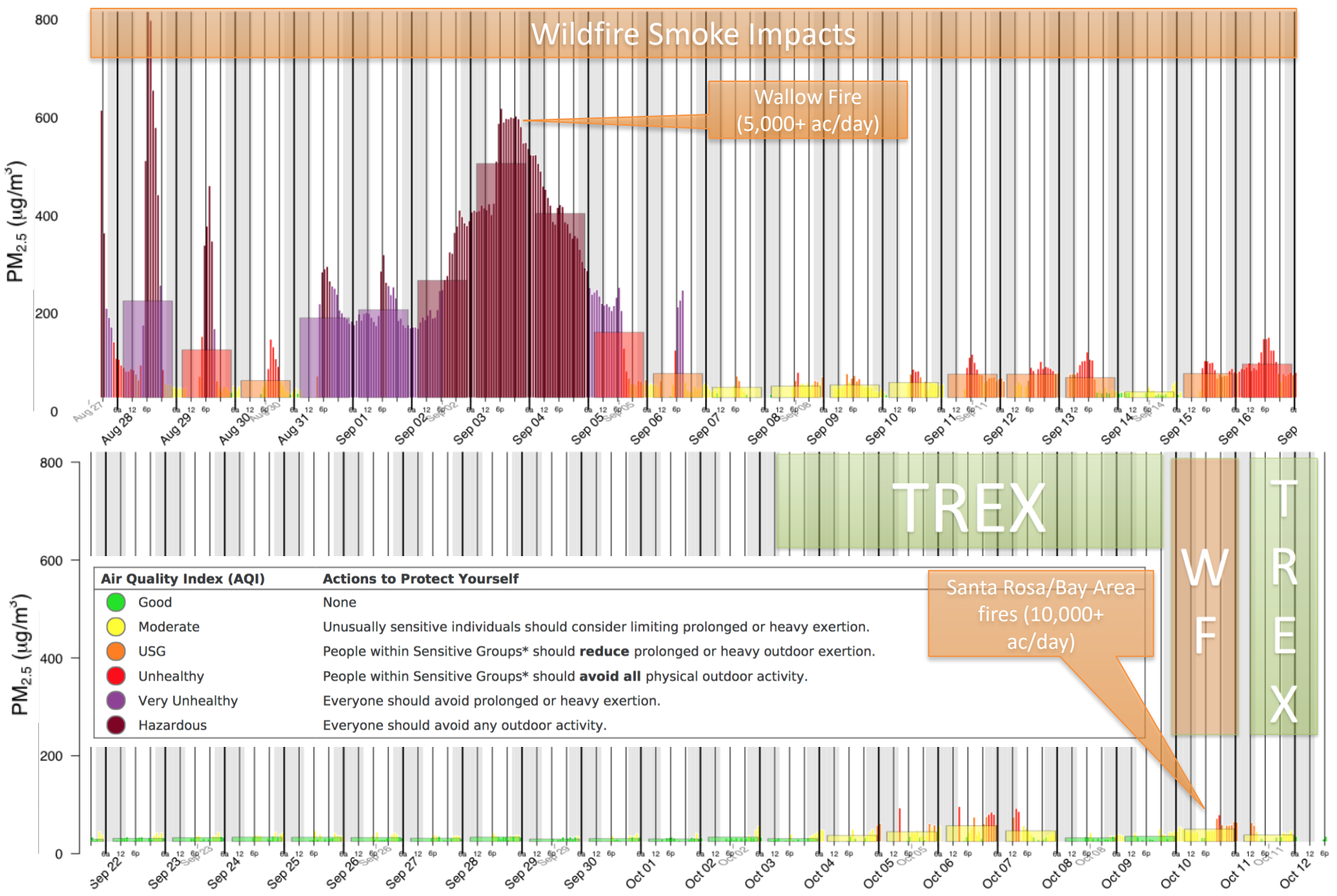


0 5 miles

Lighter smoke----->Heavier smoke

2017 Orleans Smoke Impacts: Wallow Wildfire vs. TRES Rx Fire

(Wider, transparent bars are daily 24-hr average AQI values; narrow bars are hourly NOWCAST values. See <https://www.airnow.gov/> for more details. Data are raw, preliminary values for qualitative illustration* only)

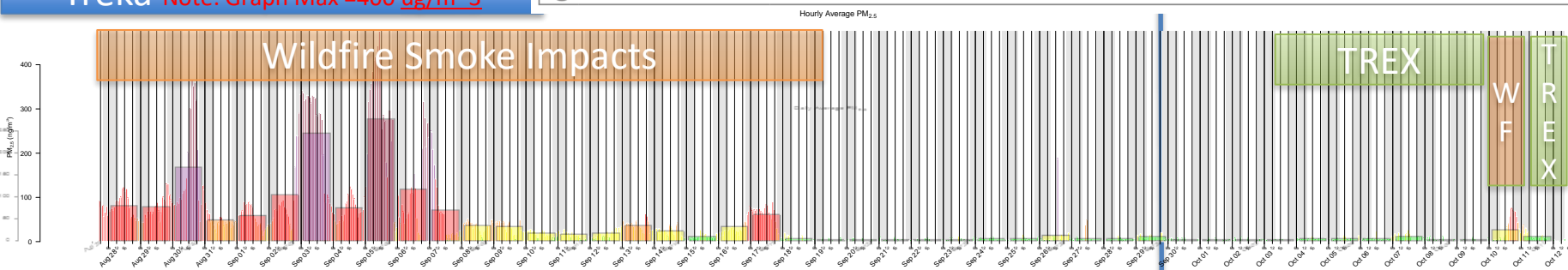


Preliminary 2017 Wildfire Smoke Overview (Hourly NowCast and Daily AQI) in the Upper Klamath River Canyon

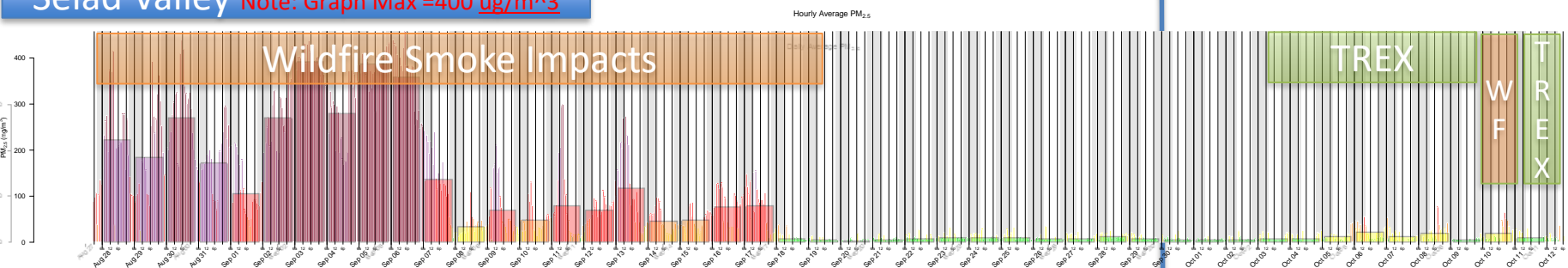
These preliminary data are raw, not validated. Note that the max concentration values (y-axis) change with each graph...

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
Hazardous	Everyone should avoid any outdoor activity.

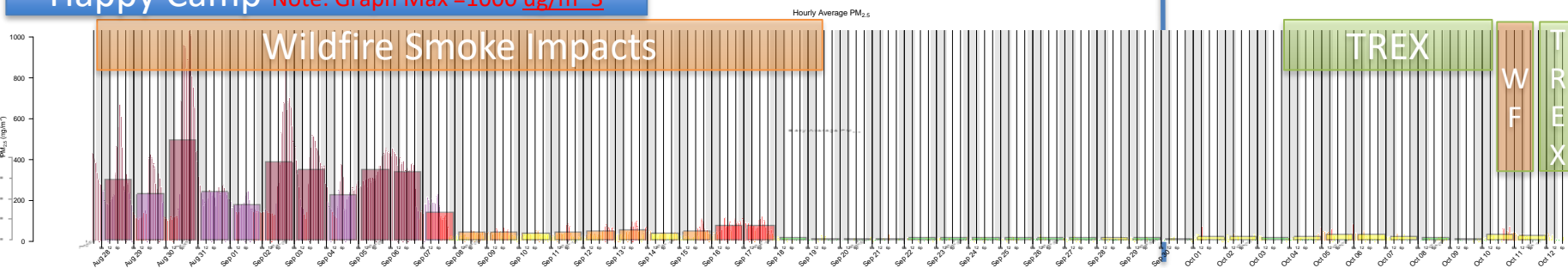
Yreka Note: Graph Max =400 $\mu\text{g}/\text{m}^3$



Seiad Valley Note: Graph Max =400 $\mu\text{g}/\text{m}^3$



Happy Camp Note: Graph Max =1000 $\mu\text{g}/\text{m}^3$

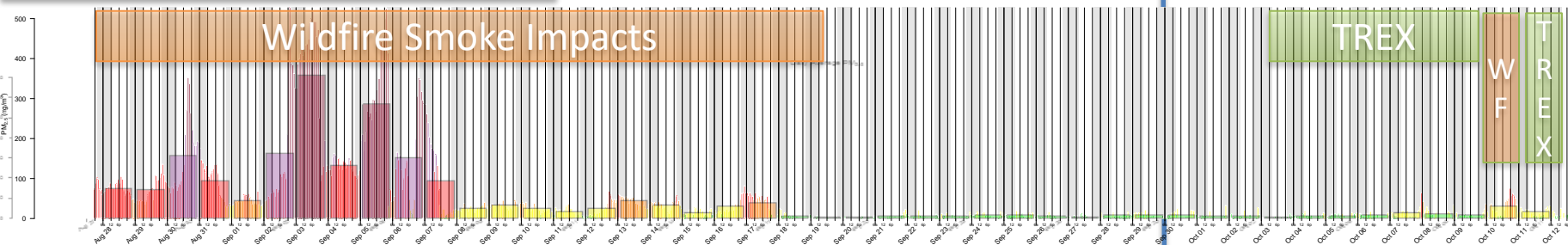


Preliminary 2017 Wildfire Smoke Overview (Hourly NowCast and Daily AQI) in the Scott Valley

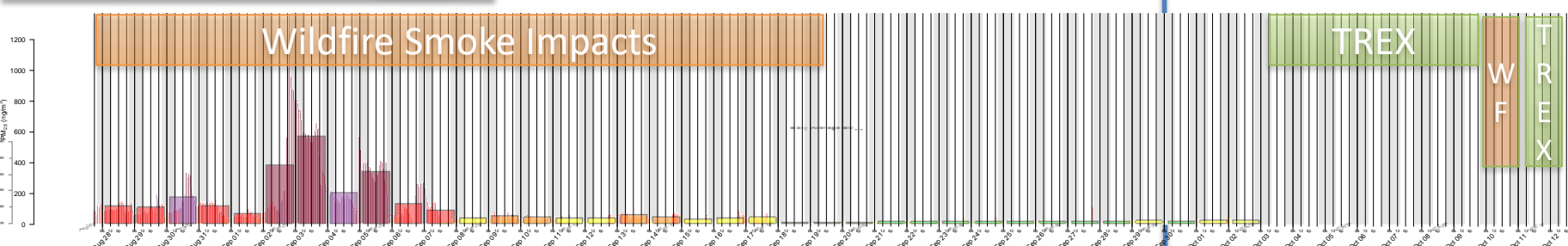
These preliminary data are raw, not validated.

Air Quality Index (AQI)	Actions to Protect Yourself
Good	None
Moderate	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
USG	People within Sensitive Groups* should reduce prolonged or heavy outdoor exertion.
Unhealthy	People within Sensitive Groups* should avoid all physical outdoor activity.
Very Unhealthy	Everyone should avoid prolonged or heavy exertion.
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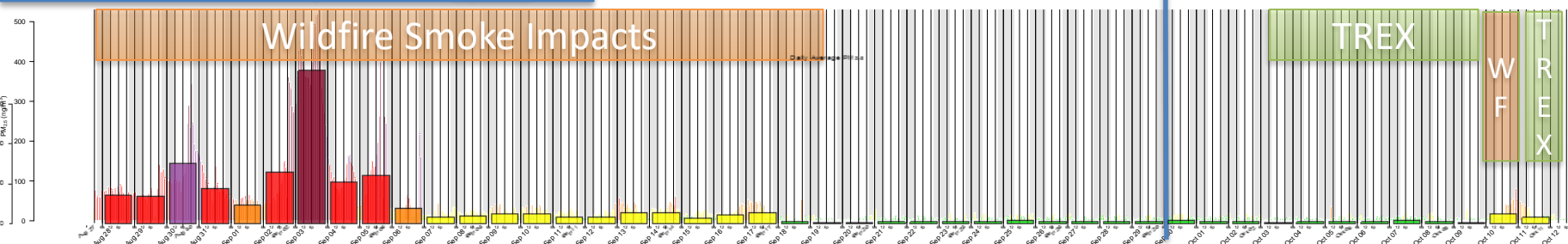
Ft Jones Note: Graph Max =500 $\mu\text{g}/\text{m}^3$



Etna (Note: Graph Max =1200 $\mu\text{g}/\text{m}^3$)



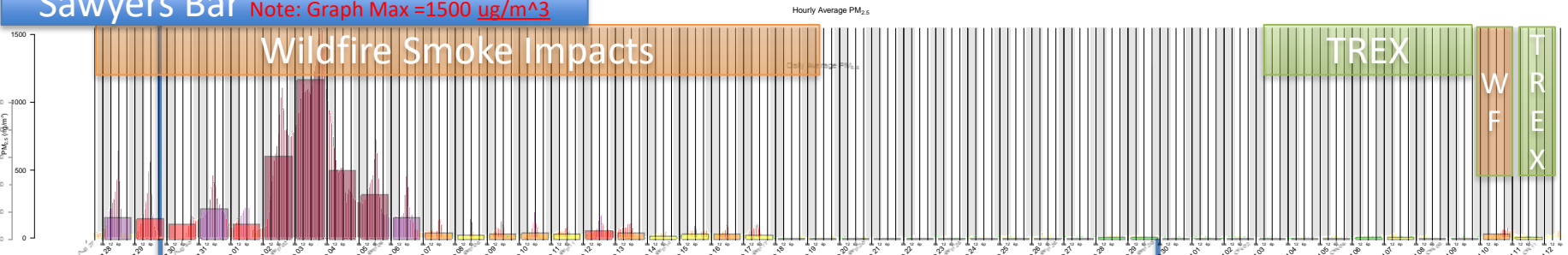
Callahan Note: Graph Max =500 $\mu\text{g}/\text{m}^3$



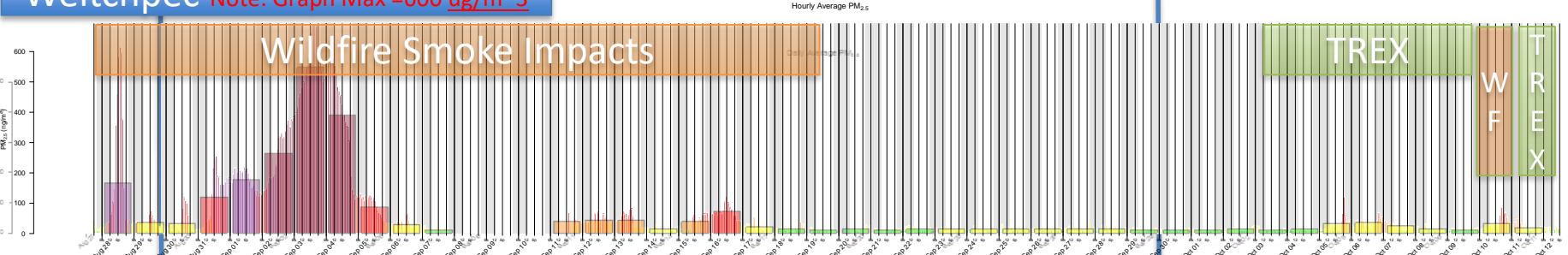
Preliminary 2017 Wildfire Smoke Overview (Hourly NowCast and Daily AQI) in the Lower Klamath River Canyons

These data are raw, not validated.

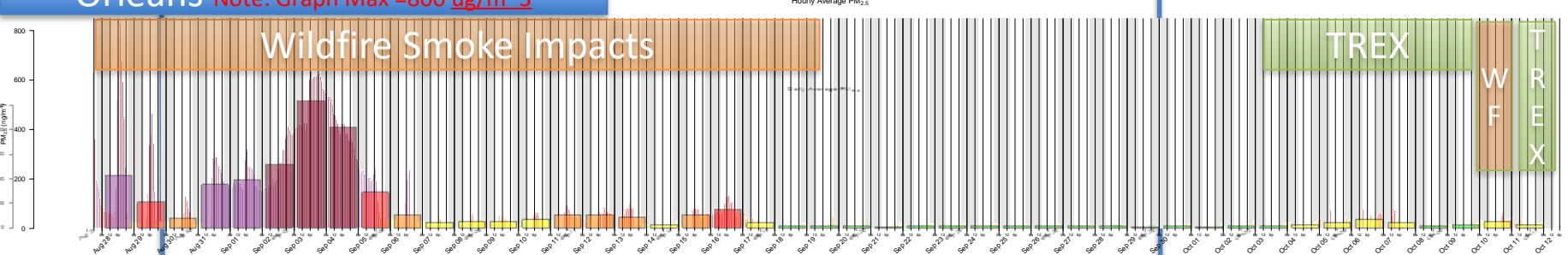
Sawyers Bar Note: Graph Max =1500 $\mu\text{g}/\text{m}^3$



Weitchpec Note: Graph Max =600 $\mu\text{g}/\text{m}^3$



Orleans Note: Graph Max =800 $\mu\text{g}/\text{m}^3$



Hoopla Note: Graph Max =500 $\mu\text{g}/\text{m}^3$

